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FM 17-42

WAR DEPARTMENT FIELD MANUAL

ARMORED INFANTRY BATTALION

WAR DEPARTMENT

NOVEMBER 1944

CHANNON, R. T.

WAR DEPARTMENT FIELD MANUAL
FM 17-42

ARMORED
INFANTRY
BATTALION



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For explanation of symbols see FM 21-6.

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CHAPTER 1

GENERAL

1. SCOPE.

This manual covers the tactical employment of the armored infantry battalion, both as part of a larger force, and when acting independently. It is designed as a guide and does not prescribe a set of inflexible rules. Each tactical situation must be solved on its own merits and the initiative of individual commanders is encouraged.

2. ORGANIZATION.

The armored infantry battalion has a headquarters and headquarters company, service company, and three rifle companies. (See fig. 1.) For details of organization, see T/O & E 7-25.

3. CHARACTERISTICS.

a. The armored infantry battalion is a powerful, mobile, lightly armored unit that is tactically and administratively self-contained and capable, to a limited extent, of independent action.

b. The battalion is specially organized, equipped, and trained for employment in mutually supporting tank and infantry action.

c. Armored infantry normally fights dismounted. Under favorable conditions vehicular armament either mounted or dismounted is used to support the attack. If vehicles are used, they must be placed in position defilade and dispersed. It moves forward

For military terms not defined in this manual, see TM 20-205.

in vehicles until it is forced by enemy fire or unfavorable terrain, to dismount. In mounted movement it is sensitive to mine fields, other obstacles, unfavorable terrain, and weather. Continued operation is dependent on maintenance and adequate resupply of ammunition, fuel, and lubricants.

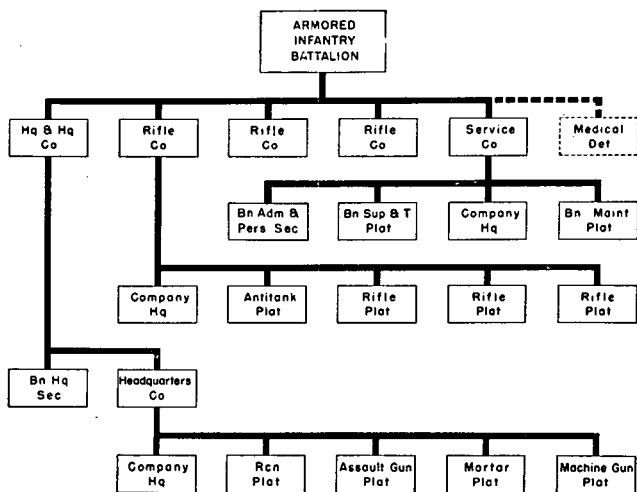


Figure 1. The armored infantry battalion.

4. ROLE.

The primary role of armored infantry is combined action with tanks. In the execution of this role it operates within the framework of the massed and coordinated efforts of a combined force, an armored combat command, or similar larger force. In this combined action it may be called upon to—

- Follow a tank attack to wipe out remaining enemy resistance.
- Seize and hold terrain gained by tanks.
- Attack to seize terrain favorable for a tank attack.

d. Form, in conjunction with artillery and tank destroyers, a base of fire for a tank attack.

e. Attack in conjunction with tanks.

f. Clear lanes through mine fields alone or in conjunction with engineers.

g. Protect tank units in bivouac, on the march, in assembly area, and at rallying points.

h. Force a river crossing.

i. Seize a bridgehead.

j. Establish and reduce obstacles.

k. Attack or defend towns.

l. Organize and defend a position.

m. Perform reconnaissance and counterreconnaissance.

5. FUNDAMENTALS.

The battalion employs the principles of surprise, fire and maneuver, and concentration of effort.

a. **SURPRISE.** Surprise is obtained by reconnaissance, use of cover and concealment, use of unexpected strength, rapidity of maneuver, attacking at an unexpected time and place and from an unexpected direction, and by deceiving the enemy as to the true point of the attack.

b. **FIRE AND MANEUVER.** Fire and maneuver is a fundamental of tactical employment. Part of the battalion supports by fire, while the remainder maneuvers. This fundamental is applicable down to and including the rifle squad.

c. **CONCENTRATION OF EFFORT.** Concentration of effort is made on critical areas. Dispersing the battalion by making simultaneous attacks on widely separated objectives is avoided.

6. TERRAIN.

a. **GENERAL.** The character of the area or region of military operations often has a decisive influence



Figure 2. Surprise is gained by use of covered approaches.

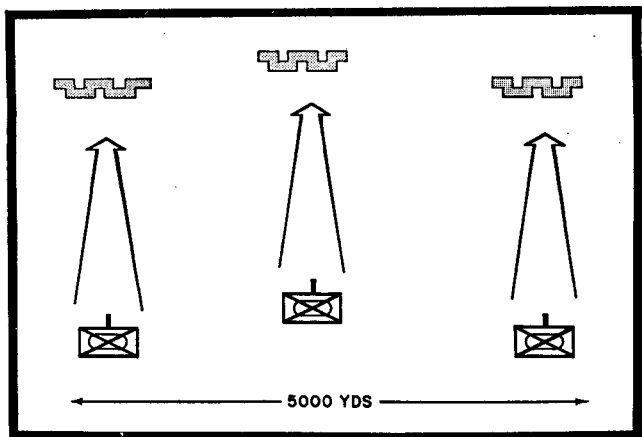


Figure 3. Do not disperse the battalion effort.

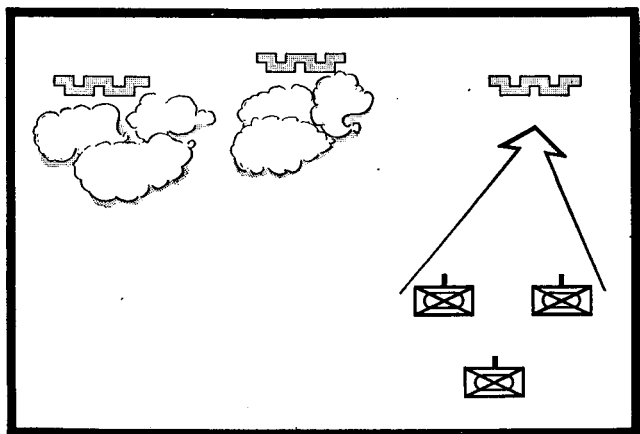


Figure 4. Concentrate on one enemy position. Use smoke to hamper enemy observation.

upon the course of operations. The more important factors to be considered in evaluating terrain include not only natural features, such as ridges, streams, bodies of water, woods, and open spaces, but also such features as roads, railways, and towns.

(1) Ground forms such as a succession of ridges and valleys, influence military operations by aiding or hampering the movement of military forces. An advance parallel to the ridges and valleys is mechanically easier than movement across successive ridges.

(2) The salient features of a commander's plan of action are usually determined so as to take full advantage of favorable terrain features.

(3) In evaluating terrain in relation to its use for military purposes, the battalion commander should always make a detailed map study and thereafter a personal reconnaissance of the area, if possible.

(4) For a detailed discussion of terrain evaluation, see FM 5-15.

b. TERRAIN FACTORS. In making an estimate of the terrain, the following factors are considered:

(1) *Observation.* The occupation of high points permits observation of the ground on which an engagement is taking place and is essential in order to bring the maximum effective fire on the enemy. Cover and concealment is based on denial of observation to the enemy.

(2) *Fields of fire.* In studying the terrain, the battalion commander seeks terrain affording suitable fields of fire. Terrain features such as woods, streams, ridge lines, and mountains divide terrain into separate areas. When terrain features inclosing an area prevent direct fire and observation into the position from outside, the area is called a compartment. A compartment of which the longer axis extends in the direction of movement of a force is a corridor. A compartment of which the longer axis

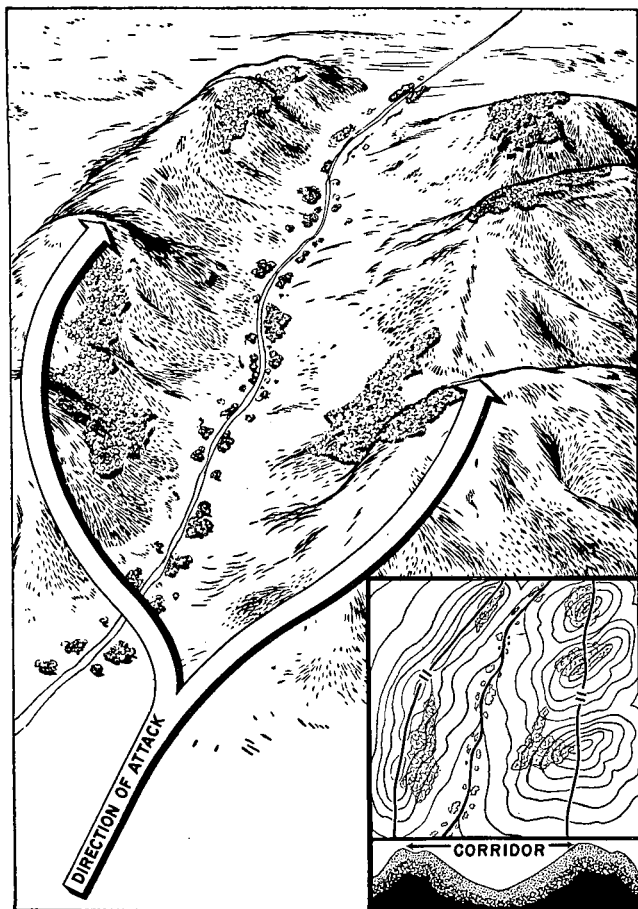


Figure 5. Corridors favor offensive action.

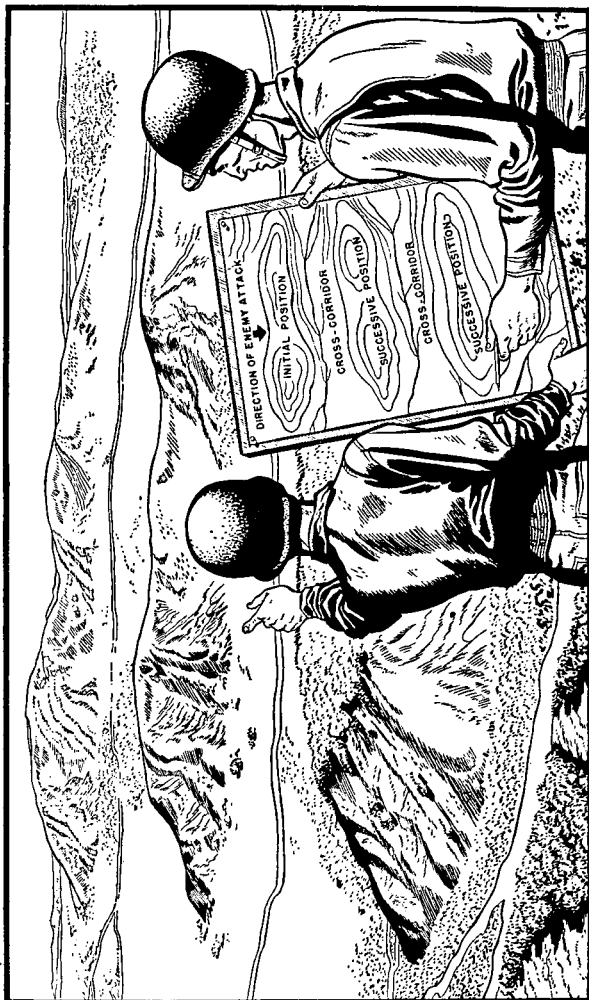


Figure 6. Cross corridors favor defensive action.

extends across the direction of movement of a force is called a cross corridor.

(a) A corridor favors the attack, since its natural boundaries limit observation by the enemy and eliminate direct fire against the advancing troops except from weapons within the corridor. In assigning a unit a corridor, care is taken to insure that terrain features from which direct fire can be brought to bear against troops within the corridor are included. Boundaries between units generally coincide with boundaries of corridors. In attacking a corridor the limiting terrain features which control observation into the corridor must be taken first, as the seizure of these dominating terrain features facilitates the capture of the entire corridor. When a corridor is seized, including the limiting terrain features on each side, a protected route of approach or route of communications into the enemy position is obtained.

(b) Cross corridors favor the defense, since the defender has observation in the direction of the attacker from the forward limiting feature of the cross corridor. This same terrain feature limits the attacker's ground observation into the defense area. Cross corridors permit defense in successive positions, offering cover to the defender and serving as obstacles to the attacker. Cross corridors also permit overlapping fires from adjacent units of the defense.

(3) *Cover and concealment.* Cover and concealment is sought in order to deny the enemy information of activities of the battalion and achieve the maximum in surprise. In making the terrain study, the type cover and concealment sought is as follows:

(a) *Approach march.* In the approach march covered avenues of approach which will allow vehicles to move as far forward as possible are desirable.

(b) *The attack.* Terrain which affords good concealment throughout the depth of the advance, and leads units into the enemy position, favors the attack.

(c) *The defense.* A position offering concealment and cover within the area to be defended, with good observation and good fields of fire, is ideal for defensive action.

(4) *Obstacles.* Obstacles are obstructions to movement. Terrain obstacles include streams, mountains, bodies of water, swamps, boulders, heavily wooded areas, deeply eroded areas, and steep inclines. Obstacles limit the use of vehicles and must be taken into consideration in formulating plans. Terrain obstacles usually favor the defender. However, they can be used at times by the attacker in the protection of flanks. The effectiveness of natural obstacles depends largely upon observation. Most obstacles are fully effective only if observed fire can be brought to bear upon them.

(5) *Routes of communication.* Availability and condition of roads and trails often determine the scheme of maneuver. Control of primary routes into the area is important for the movement of supplies, weapons, and troops. It is desirable that each unit have a definite route to its area over which vehicles can operate. Covered routes are sought and vehicles are moved across country to avoid open roads which can be seen by the enemy..

c. **KEY TERRAIN.** After considering all factors of the terrain which affect the disposition of the troops, the battalion commander next considers the key terrain features, the control of which will dominate the area.

(1) In the attack, the battalion commander makes plans to seize ridge lines, hilltops, and all other terrain features which dominate the zone of attack of the battalion. The seizing of these dominating

features facilitates the capture of the entire area. The attack is planned so that the troops advance objectively from one commanding terrain feature to another. Movement is along covered routes of approach. (For details see ch. 6.)

(2) In the defense, the battalion commander seeks to dispose his troops so that key terrain features can be held, with the entire front being covered by fire. The main line of resistance is located so as to defend the most dominating terrain features within the sector of defense. However, it is not always located along the dominant terrain features.

CHAPTER 2

TRAINING

7. GENERAL.

a. REFERENCES. The subject of training is covered in detail in FM 21-5, FM 100-5, and TM 21-250. Special instructions are published in periodic training directives.

b. CONCURRENT TRAINING. Economy of time may be effected by planning certain training concurrently. Concurrent training, such as rifle marksmanship and training in the care, nomenclature, and functioning of the rifle, can be carried on concurrently without loss of training time. On road marches first-echelon maintenance is concurrent training for the drivers and assistant drivers. The aggressive officer discovers many ways in which concurrent training can be used to advantage both in accomplishing the training objective and conserving time.

8. TACTICAL TRAINING.

a. Tactical training of the component elements of the battalion is covered in other manuals pertaining to those elements. The battalion as a unit is trained tactically in—

- (1) Intelligence and reconnaissance.
- (2) Marches and movements.
- (3) Security.
- (4) Offensive combat.
- (5) Defensive combat.
- (6) Retrograde movements.

(7) Infantry-tank cooperation.

(8) Special operations.

b. The company should complete each phase of the training listed in (1) through (8) above before each phase is scheduled for battalion training.

9. SUPPLY, MAINTENANCE AND EVACUATION.

a. GENERAL. Situations involving the functioning of the medical detachment, the maintenance platoon, and the supply and transportation platoon are included in the tactical training. For duties of the medical detachment, see chapter 11 and FM 17-80, and for duties of the maintenance platoon and the supply and transportation platoon, see chapter 10.

b. MAINTENANCE. Training in maintenance is stressed continuously. The battalion commander is responsible that the weapons and vehicles are kept in the best possible condition. He controls the maintenance training by a definite plan, which includes the following:

(1) A daily report from the battalion motor officer on the state of maintenance within the battalion.

(2) Definite first-echelon instruction in all training exercises possible.

(3) Vigorous action on the part of all officers and noncommissioned officers in continuous instruction.

(4) Instant correction of faulty driving and maintenance drills.

(5) Frequent inspections by the battalion and company commanders to determine the status of training.

(6) Constant supervision of parks and spot check formations. (See ch. 10.)

(7) Frequent rotation of drivers detailed for specific jobs, with their vehicles, to insure that all drivers

of personnel and cargo vehicles receive the maximum of training.

(8) Constantly impressing upon all officers and enlisted men the vital importance of keeping vehicles and weapons in the best possible condition.

10. TRAINING IN COMBAT ZONE.

a. GENERAL. Training of the battalion never ceases, but is continuous up until the unit is sent into action. Training in the combat zone consists primarily of review of previous training, detailed training on weak points, and detailed rehearsals on impending operations.

b. TERRAIN, CLIMATE. New terrain and a probable change in climate affects training in the combat zone. Special training to overcome these obstacles is as detailed as necessary.

(1) *Terrain.* In the combat zone, the methods and maneuvers of the battalion in training are adapted to the enemy and the terrain over which the unit is later to fight.

(2) *Climate.* The climate in the combat zone may be a radical change from that experienced in the initial training. The troops must become accustomed to the new climatic conditions. This means intensive training, with probable changes in means and methods. The new climate may require changed equipment, special rations, and other factors peculiar to the combat area.

c. BETWEEN PHASES. Between phases or prolonged lulls in combat, front line units continue training within the limits imposed by the situation. This training is conducted in accordance with the deficiencies disclosed. Training of front line troops between phases in combat affords opportunity to correct errors disclosed in battle. Detailed rehearsals for planned operations should be held, when practicable.

d. IN RESERVE OR IN REST AREAS. Units which have been in combat and returned to reserve or to rest areas utilize spare time for further training. This gives opportunity to improve those points in which the battalion or units of the battalion were deficient, to try new methods and dispositions, and to correct faults which were apparent in combat.

CONTROL, COMMUNICATION, LIAISON

11. FIRE CONTROL AND COORDINATION.

a. GENERAL. The properly coordinated and controlled efforts of all personnel and all weapons, both organic and supporting, are required to produce decisive results. Without this control, effort is dissipated on relatively unimportant missions. With it, effort is properly timed and concentrated on vital objectives, the attainment of which contribute to the success of the operation as a whole. The battalion commander considers the firepower of supporting as well as organic units in making his plans.

b. MEANS OF OBTAINING. Control and coordination are obtained by proper application of the following means:

(1) *Orders.* Clear, concise orders assigning definite missions prior to the engagement are given to all elements of the battalion.

(2) *Observation.* In order to obtain the maximum firepower of both organic and supporting weapons, it is essential that key terrain features affording the best observation be secured. The artillery can deliver unobserved fire by use of map data, but the firing is much more accurate with observation. Observation is not too great a problem in rolling, open terrain and when friendly aviation has control of the air. However, in forested country or on flat terrain, proper observation is difficult to obtain.

(3) *Communication.* Fire control is impossible without some means of communication. In the

armored division, radio is the primary means of communication. Prior to the attack, arrangements are made for the armored infantry company commanders to check into one artillery fire direction net in order that these officers may call for and adjust artillery fire in case an artillery forward observer becomes a casualty or cannot be contacted.

(4) *Liaison.* The purpose of liaison is to promote cooperation and coordination of effort by personal contact. Liaison is facilitated by establishing command posts as close together as is consistent with the principles of security.

(5) *Use of staff.* Staff officers assist in control and coordination. They procure and furnish required information, prepare details of plans, and transmit orders to lower units.

(6) *Constant supervision.* The battalion commander makes frequent visits to subordinate units to insure the desired control and coordination.

c. CLASSES OF COORDINATION. Fire control and coordination are tactically classified as follows:

(1) *Prior to attack.* Control prior to the attack is comparatively simple. All administrative matters are settled at this time. Provisions are made for the destruction or neutralization of all known targets. Appropriate battle missions are assigned in the attack orders, leaving control initially to subordinate commanders. However, provisions are made for regaining control. Communications and liaison are checked at this time.

(2) *During attack.* Once the attack has started, centralized control is difficult, the degree of control being directly dependent upon the amount of pre-arrangement prior to the attack. The battalion staff is used at this time to coordinate the attack as much as possible without restricting the individual initiative of subordinate commanders.

(3) *During reorganization.* Centralized control is regained during reorganization. Prearranged defensive fires of organic, attached, and supporting elements are coordinated for repelling counterattacks. Additional fire plans are made as necessary. Plans for resuming the offensive are initiated immediately.

(4) *During defense.* In a defensive situation all subordinate units are maintained under centralized control, and each is assigned a definite sector of defense. As in other situations, liaison is established between supporting and supported units, and fire control within each subordinate unit is the responsibility of each unit commander.

12. SUPPORTING TANKS AND ARTILLERY.

a. GENERAL. Fire control of supporting weapons is achieved by detailed preliminary plans. The battalion commander confers with commanders of all supporting and subordinate units. The plans include—

(1) Assignment of definite missions, with target priorities for each major weapon.

(2) A tentative schedule of fires.

(3) Assignment of definite sectors for all units.

b. TANKS. The infantry battalion and tank unit commanders coordinate the mission for the tanks with the battalion plan of fire and maneuver. The coordination plans include—

(1) Methods of communication.

(2) Selection of a position for the tanks.

(3) Possible courses of action. Alternate plans are made for either the tanks or infantry to take the lead. As the situation changes, it may be necessary to alter those plans. (See FM 17-36.)

c. ARTILLERY. Artillery supports by means of its firepower, and its fire is coordinated with the battalion fires. The artillery delivers heavy concentra-

tions on enemy weapons and positions which are hampering the carrying out of the infantry missions. Some artillery fire may be diverted to antitank defenses. The decisions and plans of the artillery are based on the plan of the armored infantry battalion commander. Selection and organization of artillery positions are left to the artillery commander.

d. GOVERNING CONDITIONS. Fire control depends upon thorough discipline and training of individuals and crews of crew-served weapons; use of proper weapons and ammunition; skill in the designation of targets and in the prompt identification of such targets, observation, communication, and timing. Timing is the ability to judge the pace of an attack and to vary that pace to meet the demands of the situation. Timing is the key to coordinated effort. Once the engagement has started, time and space relationships are kept in mind constantly. The degree of coordination attained is directly proportionate to the accuracy of estimation and application of time and space factors.

13. COMMUNICATION.

a. GENERAL. Communication facilities of the armored infantry battalion are radio, wire, messenger, visual and sound signals, and pigeons. The battalion commander in planning communication to be used under various conditions, considers the capabilities and limitations of each available means of communication, selecting the method best suited to the situation. Alternate means are always provided. The battalion commander is responsible for having available at all times two or more means of communication with higher headquarters, subordinate and adjacent units.

b. COMMUNICATION OFFICER. The communication officer coordinates the communication systems of the

battalion. As a staff officer, he advises the battalion commander of the most efficient employment of the available means of signal communication at his disposal and aids in the preparation of signal orders as required. His duties include—

- (1) Training unit communication personnel.
- (2) Establishing effective communication SOP.
- (3) Disseminating SOI information.
- (4) Coordinating supply and maintenance of communication equipment.

c. MESSAGE CENTER. The purpose of the battalion message center is to speed the transmission of messages. When the command post is established, the message center is located at the entrance of the most probable route messengers will use in entering the command post. For operation of message center see FM 24-5.

d. SIGNAL OPERATION INSTRUCTIONS, STANDING SIGNAL INSTRUCTIONS. Signal operation instructions (SOI) are instructions issued for the technical control and coordination of all signal agencies within a command. Standing signal instructions (SSI) contains instructional material describing the methods of using various items published in the SOI. The battalion normally operates under the SOI and SSI of the next higher echelon. Necessary changes in the SOI and SSI are made by the command issuing them. Using personnel must have pertinent extracts of the SOI.

e. RADIO. (1) Radio is the principal means of communication within the battalion. It is used between rapidly moving units and in fast-moving situations where other means of communication are impracticable. Radio is divided into—

(a) *Radio télégraphy (CW).* This is used between battalion and higher units. Operators trained in code and maintenance of equipment are needed

to operate the equipment. CW net procedure is covered in FM 17-70, FM 24-6, and FM 24-10. Procedure signals (signs) are found in FM 24-12.

(b) *Radio telephony (voice)*. Radio telephone is employed within the battalion and with higher units. Radio telephone (r/t) procedure is covered in FM 24-9.

(2) *Radio equipment*. Radio sets within the battalion are of various types to fit the diversified needs of battalion communication. The dependable range of any radio set is limited by the frequency used, time of day, weather, and terrain conditions. For distribution of sets in battalion, see current tables of equipment. Radio sets in the battalion are—

(a) *SCR-506*. A medium range set, with a range of 75 miles by CW and 25 miles by voice. The transmitter has four preset and one tunable channels.

(b) *SCR-508*. A short range set with two receivers and one transmitter. It has a range of 10 miles for voice only. There are ten channels available for transmitting and twenty for receiving. The set does not require a skilled operator, but it must be preset by a radio repairman.

(c) *SCR-509*. A two channel set for portable work with a voice range of 5 miles. This radio must be aligned by a radio repairman.

(d) *SCR-510*. The same as the SCR-509, except it is installed in a vehicle and is powered by the vehicle battery.

(e) *SCR-528*. The same as the SCR-508, except it has only one transmitter and one receiver.

(f) *SCR-536*. A portable set with a voice range of 1 mile.

(g) *SCR-193*. A substitute receiver and transmitter for the SCR-506. Only one tunable channel is available. The range is 50 miles with CW and 25 miles with voice.

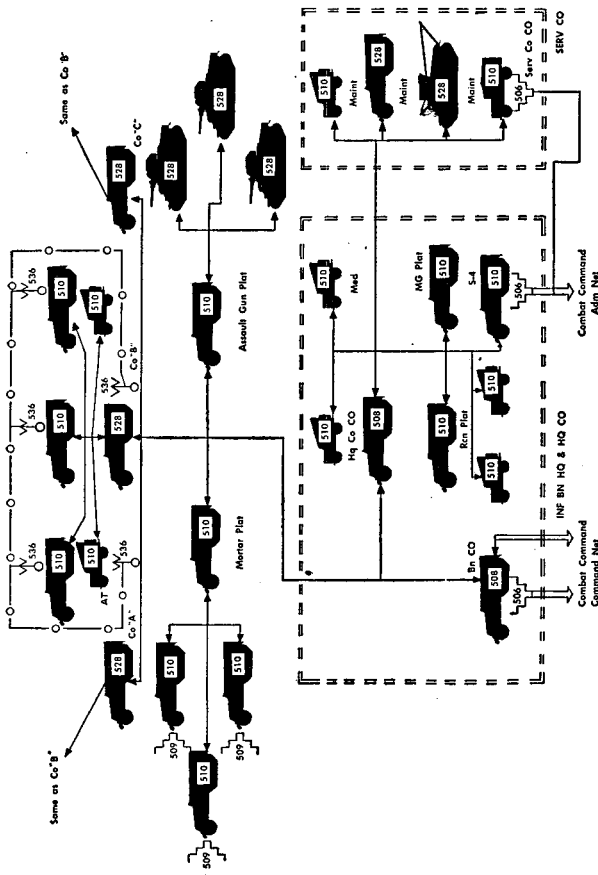


Figure 7. Basic radio net of the armored infantry battalion.

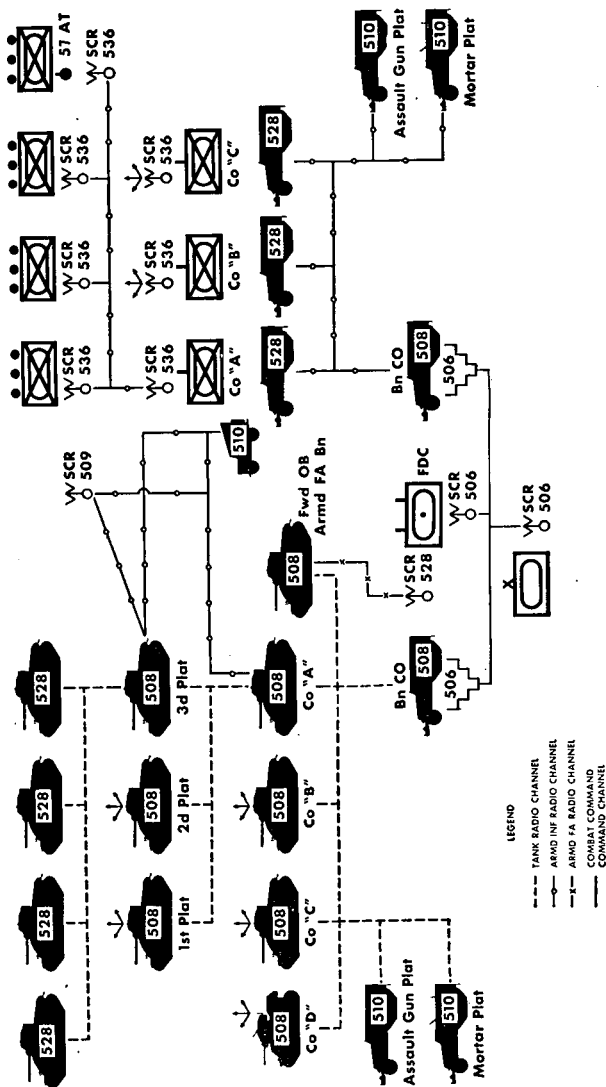


Figure 8. Infantry-tank-artillery team radio net.

(3) *Radio nets.* The basic radio net used in the armored infantry battalion is shown in figure 7. The composition of the net may change, depending on the formation, disposition, and mission of the battalion. Other nets which may be established are air warning nets, march control nets, and liaison nets. Net changes can be easily accomplished due to the number of preset channels available in each set. Figure 8 shows basic radio nets of a tank-infantry-artillery team. FM 24-6 furnishes a guide for radio net operation.

f. WIRE. (1) The battalion commander uses wire whenever practicable. It is one of the safest means of communication within the battalion and gives the battalion commander a means of personal conversation with his subordinates. However, wire communications may be intercepted without actual contact, especially in the forward areas.

(2) Wire is usually laid from higher to lower echelons. All communication personnel is trained in the laying and use of wire. This is covered in FM 24-20 and FM 17-70.

(3) Wire communication between battalion and company command posts is established when the battalion is on the defense, and in bivouac or assembly areas.

(4) Wire communications equipment available within the battalion consists of a switchboard, field telephones, portable reel equipment, and field and assault wire.

g. VISUAL COMMUNICATION. Visual communication in the battalion consists of flags, panels, pyrotechnics, hand signals, signal lamps, and colored smoke.

(1) Flags are used in inter-vehicular communications in the control of march columns. Each combat

vehicle is equipped with flag sets for this purpose. Flag signals are covered in FM 17-5.

(2) Panels are issued in several types to the battalion. They are used in air-ground communication and for identification of ground units. Complete instructions on employment of panels are found in Combined Communications Board Procedure 8 (CCBPS).

(3) Pyrotechnics are used in accordance with instructions in the SOI and field order. Rifle and carbine grenade launchers are available for use in the battalion. They are used as a means of communication within the battalion, between adjacent or supporting units, and for air-ground identification and communication. The use of pyrotechnics necessitates close cooperation and prior planning. FM 17-70 and FM 24-5 give instructions in the use of pyrotechnics.

(4) Hand signals are used by leaders in dismounted actions to control their units. Their use is limited by visibility and terrain. Special signals may be assigned within a unit for a particular mission.

(5) The use of signal lamps requires careful coordination and is restricted by visibility. Signals sent from rear to front may be interrupted by the enemy.

(6) Colored smoke is used principally to identify friendly troops.

h. MESSENGER. Messenger communication is used by all units. Its use is dependent upon personnel rather than equipment. Messengers may be on foot or mounted in vehicles. Special training is given messengers as outlined in FM 24-5.

i. SOUND. The battalion has bugles and gas alarms for sound communication. Any audible sound produced by a mechanical or acoustical device, excluding speech, may be used. The sound signals are co-

ordinated by higher headquarters. Standard signals are prescribed in FM 24-5.

j. Pigeons are a means of communication used from the front to the rear, and are obtained from the signal officer of the higher headquarters when the situation warrants their use.

14. COMMUNICATION SECURITY.

Communication security comprises all means taken to prevent the enemy from gaining information by interception or observation. The SOI publishes codes and key words to facilitate communication security. To prevent improper use of wire and radio communication, strict discipline is maintained at all times. In instances where secrecy is required radio silence is imposed. Enemy intercept stations are able to locate accurately the position of radio stations. For general instruction in safeguarding of military information see AR 380-5, and for counterintelligence see FM 30-25. Principles for security are listed in FM 17-70.

15. LIAISON.

a. The battalion commander establishes liaison with higher headquarters by means of a liaison officer. Other officers or competent noncommissioned officers are used to establish liaison with adjacent units. The effectiveness of liaison is directly proportional to the efficiency of the liaison officer.

b. In order to insure efficient liaison, the battalion commander selects intelligent and tactful officers for this duty. Liaison officers must be alert, intelligent, competent, tactful, and energetic. Special training is desirable and includes—

- (1) Map and air photograph reading.
- (2) Terrain appreciation.
- (3) Staff procedure of higher units.
- (4) Tactics and technique of other arms.

c. On arrival at higher headquarters or adjacent units the liaison officer informs the message center where he can be found. He informs the unit commander of his battalion commander's plan of action and the tactical situation. With tact and energy he obtains the exact tactical situation and plan of action of the unit and assures himself that his battalion commander is immediately informed. While with a unit he keeps the message center informed of where he can be found in order to keep abreast of any changes that occur. Changes in the tactical situation or plans are immediately reported in order to facilitate command and coordination of effort.

d. The battalion commander makes necessary arrangements for his staff to give the fullest cooperation to liaison officers from other units. He instructs his message center to keep an accurate record of the arrival, departure, presence, and absence of all liaison officers, organic and attached.

e. For further details see FM 101-5.

CHAPTER 4

MARCHES AND BIVOUACS

16. GENERAL

The subject of marches is covered in detail in FM 25-10 and FM 100-5.

a. A successful march is one that places troops and equipment at their destination at the proper time and in proper condition to fight. A successful march depends upon good march discipline. This can be obtained only by thorough training in march procedure and rigid enforcement of march rules.

b. In planning the march, the battalion commander considers the following factors which vary the speed of vehicles:

(1) Poor visibility caused by darkness, dust, fog, smoke, or rain.

(2) Condition of roads.

(3) Terrain.

(4) Mobility of vehicles within the column. The maximum speed is governed by the slowest vehicles in the column.

(5) Condition of the vehicles.

(6) Tactical situation.

c. After studying all the factors which govern the speed of the vehicles, the battalion commander determines the rate of march, which is the average speed over a period of time, including periodic short halts. The rate of march must be such to accomplish the movement in the time desired. Due to the terrain and conditions of the route it is impossible for the march unit to maintain an even rate of speed. Ve-

hicles necessarily slow down going up steep hills, through muddy or rough roads, around curves, through towns or cities, or in inclement or foggy weather. They can increase speed on good roads or on level ground. The battalion commander, after considering factors which will alter the speed of the vehicles, sets a maximum speed for the leading vehicles of each march unit. Another maximum speed is set for vehicles within the column. Vehicles within the column are given a greater maximum speed than lead vehicles in order that they may regain their proper distance should they fall behind. The vehicles never exceed the prescribed maximum speeds. The lead vehicles are driven with caution over rough or dangerous areas, picking up speed gradually as they reach more advantageous conditions. Following vehicles keep their proper distance. When good march conditions exist, all vehicles move as near the maximum speed limit as possible, in order to regain time lost.

d. For detailed discussion of distances between vehicles, see FM 25-10. The density of vehicles depends upon the tactical situation. When an air attack is imminent, vehicles may be 100 yards or more apart. When air superiority is assured and road space is needed, the commander may prescribe that vehicles move in close-column formation.

17. MARCH PLANS AND ORDERS.

The march order is usually oral, supplemented by sketches or marked maps of the route. Each vehicle commander and each driver must know the route, and when practicable be given a sketch of the route. For forms of march orders, see FM 25-10 and FM 101-5.

a. **WARNING ORDERS.** Warning orders are issued far enough in advance of the time set for the depar-

ture so that proper preparations for the march may be made. The time required to complete these preparations depends upon many factors, such as the status of supply and maintenance and the tactical situation in which the troops may be involved at the time the warning is issued.

b. PLANS. Plans are based on a complete estimate of the situation. The mission, terrain, zone or routes, and probable future employment constitute the basis for the decision and march plan. Plans for movement include—

- Formation for the march.
- Rate of march.
- Route, routes, or zone.
- Phase lines and control points.
- Security measures.
- Route reconnaissance.
- Maintenance and evacuation.
- Supplies.
- Halts.

(1) *Formation for the march.* The march formation depends upon the orders of the higher commander, the routes or terrain, the enemy situation, the place in column. Advance, flank, and rear guard formations of the battalion are covered in chapter 5.

(2) *Route.* The route or zone usually is designated by the higher commander. When a zone of advance is given, or the unit is operating alone, the commander, by map reconnaissance, selects his route and alternate routes.

(3) *Phase lines and control points.* Phase lines should be clearly distinguishable terrain features such as streams, crossroads, and well-defined ridges across the line of march. They are spaced from 1 to 2 hours apart, and are used for control purposes. The heads of columns cross phase lines at predesignated times or upon order of the higher commander. Such

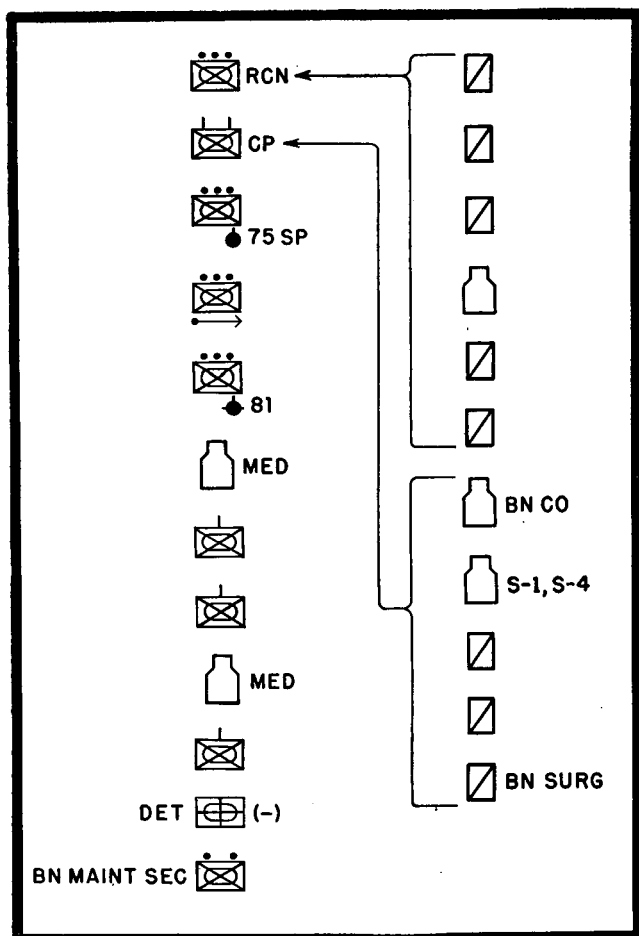


Figure 9. Typical march formation of an interior battalion, minus trains.

other points as may be necessary are designated for control.

(4) *Security*. Security is covered in chapter 5, this manual, FM 100-5 and FM 17-100.

(5) *Route reconnaissance*. (a) After receiving warning orders the commander procures all information practicable concerning the route of advance. This information includes conditions of roads and bridges, location of defiles, places where guides must be posted, and areas where enemy attack may be expected. When acting alone he has as much of the route as practicable reconnoitered. (See FM 25-10.) When operating as an interior unit of a column he depends primarily upon map reconnaissance and information received from higher headquarters.

(b) When examining the map, the commanding officer looks for places where the column may stray from the route. He looks for streams which may cause trouble and places where the column might be ambushed. Ground reconnaissance is planned on the basis of map reconnaissance.

(6) *Supplies*. A check is made to see that the unit has a normal supply of equipment, fuel and lubricants, ammunition, food, water, and that all special requirements for the operation have been met. The administrative plan must be adequate to facilitate continued administrative support.

18. TRAINS.

a. The company maintenance section follows at the tail of the company column.

b. The battalion ammunition section and fuel and lubricant vehicles follow at the rear of the battalion.

c. Kitchen, ration, water, and equipment vehicles move with the battalion or the next higher unit trains. For long marches they accompany their companies or are grouped with the supply and transportation platoon at the rear of the battalion. When combat be-

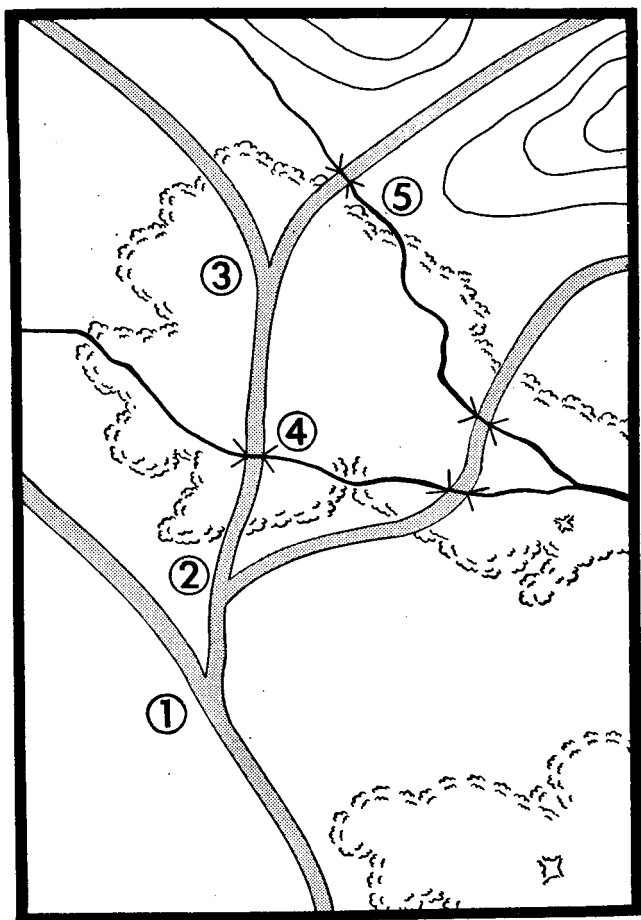


Figure 10. Route reconnaissance by map. Guides will be needed at 1, 2, and 3. Bridges at 4 and 5 must be examined.

comes imminent for the battalion, these vehicles drop out of column at a designated locality and join the higher unit trains.

d. The battalion medical detachment is distributed throughout the column. (See fig. 9.) (For details see ch. 11.)

e. The battalion maintenance section marches at the rear of the column.

f. The battalion personnel section remains with next higher unit of division trains.

19. MAINTENANCE ON THE MARCH.

a. **MAINTENANCE SECTION.** The company maintenance section is placed at the tail of the company march column to render assistance to organic transportation of the company. When a job is encountered which is beyond the capacity of the men and tools available in the company section, or when time is not available, the vehicle is turned over to the battalion maintenance section. This section makes necessary repairs, or turns the vehicle over to the maintenance battalion sections or platoons supporting the march column.

b. **DUTIES.** Roads are cleared immediately of stalled and disabled vehicles. Vehicles are repaired if practicable. The march column personnel and the column second-echelon maintenance sections accomplish this, if possible, prior to the arrival of the maintenance battalion personnel. Disabled vehicles are removed to the side as far as the ditches or shoulders of the road allow, so as not to obstruct traffic. The driver and assistant driver remain with the vehicle. Other personnel are placed in other vehicles in the column.

c. **DRIVER MAINTENANCE.** Drivers and assistant drivers are alert at all times on the march to detect any unusual noises or other indications of defects. During halts they check their vehicles and vehicular

loads for presence and security. (For details see ch. 10.)

20. CONDUCT OF THE MARCH.

a. The unit moves out of the bivouac area at the proper time to reach the IP at the time scheduled.

b. The commanders have no fixed posts in the column, but go where they can best observe the movement and exercise control. However, the commanders usually have their command post vehicles near the head of the elements for which they are responsible, in order to obtain early information of any emergency that may arise.

c. A control officer marches at the head of each march unit. He regulates the rate of march of his unit and insures maintenance of direction.

d. A staff officer patrols the column. He falls out of column, watches vehicles pass, and rejoins the head of the column at the halt. He checks on the number of vehicles which have become stalled or disabled, and security and march discipline. He reports the result of the check to the battalion commander. He is provided with a radio for emergency contact with the head of the column.

e. The following measures are taken to insure security against air attack:

(1) One radio in the battalion headquarters is kept on the air warning net if such is established, or on the higher command net.

(2) An adequate warning system is established.

(3) Vehicles move at increased intervals.

(4) Vehicular weapons of alternate vehicles are trained to cover the front, right, rear, and left, giving all-around protection. The weapons are manned at all times.

(5) Sufficient air observers are posted to provide all-around observation. (See fig. 11.)

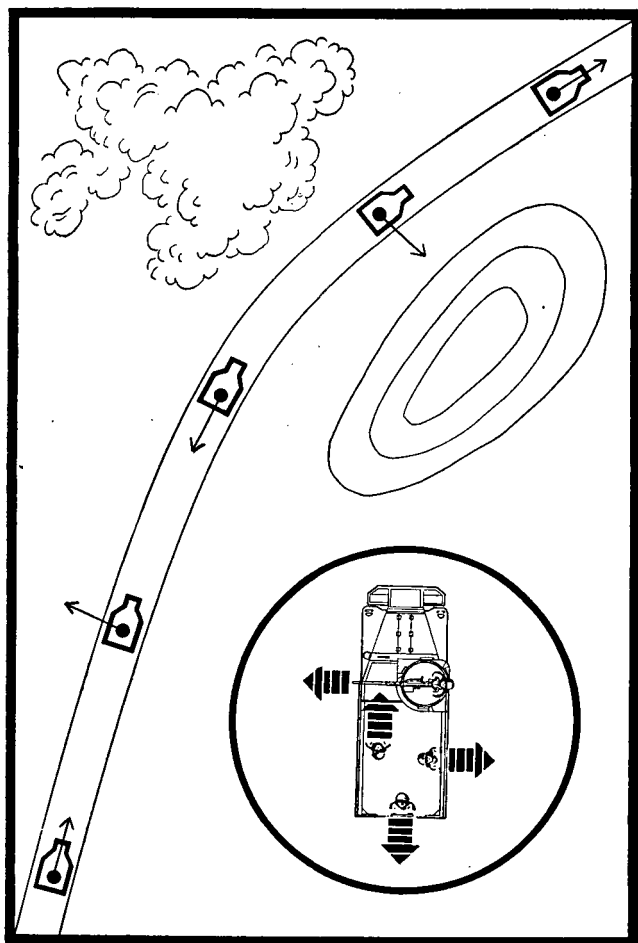


Figure 11. Air security on the march. Vehicular weapons are pointed alternately to the front, right, rear, and left. Each vehicle has all-around observers.

(6) At temporary halts, vehicles are moved under concealment, if possible, and tracks are brushed out. If concealment is not available, vehicles are moved off the road and dispersed, if possible. Fox holes are dug at long halts.

f. Personnel in $\frac{1}{4}$ -ton trucks, or heavier vehicles, are used as traffic guides, guards, and connecting files to keep contact with the unit ahead. (For details, see FM 25-10.)

g. A billeting party is sent ahead, as required by higher headquarters, to guide units into bivouac. (See par. 23.)

21. SCHEDULED HALTS.

a. Normally a scheduled halt of 15 minutes is made after the first hour and halts of 10 minutes at the end of 1 hour and 50 minutes thereafter. In a long column, some units may not have left the bivouac before the first 15-minute halt, and other units may have traveled only a few minutes. These halts are for the purpose of inspections and maintenance of vehicles, rest of personnel, and changing drivers.

b. Halts for feeding usually coincide with refueling halts.

c. For security at the halt, see chapter 5.

22. DISMOUNTED MARCHES.

The armored infantry units march mounted until forced by the terrain, proximity of the enemy, or enemy fire, to dismount. Fundamentals contained in FM 7-20, pertaining to dismounted marches, are applicable to dismounted armored infantry units. Dismounted action is covered in subsequent sections of this manual.

23. BIVOUACS.

a. GENERAL. (1) *Selection.* The battalion bivouac area is usually selected by the combat command or higher headquarters. At times the selection

may be made by the battalion commander. The site is selected and announced as early as possible, so that the billeting party can complete all necessary arrangements prior to the arrival of the battalion.

(2) *Bivouac requirements.* Bivouac sites should provide cover and concealment, natural obstacles to mechanized attack, good standing for vehicles, sufficient area to provide necessary dispersion, and sufficient exits to prevent being blocked by enemy action, and be close to the route of march.

(3) *Size.* The size of bivouac areas required varies with the tactical situation and the terrain. To bivouac the entire battalion with an interval between vehicles of 50 yards requires approximately 83 acres or a square of 635 yards on the side. This interval between vehicles may be increased or decreased according to the tactical requirements or the terrain. To allow for terrain obstacles, sparse or uneven cover, and road or trail nets, the billeting officer seeks an area of approximately 1,000 yards square to insure that vehicles are adequately spaced and concealed.

b. RECONNAISSANCE. (1) *Billeting party.* To facilitate movement in the bivouac, the battalion commander designates a detail comprising—

(a) A billeting officer, usually the S-1.

(b) A guide, preferably a noncommissioned officer from each company and attached unit. Additional company guides are furnished if the transportation and the tactical situation permits.

(2) *Duties.* The general duties of the billeting party are—

(a) To select the bivouac site if this has not been previously determined, and to make necessary arrangements for its occupancy.

(b) To apportion the area among the companies and separate units of the command.

(c) To reserve facilities for administration, supply, and command.



Figure 12. Ideal bivouac area.

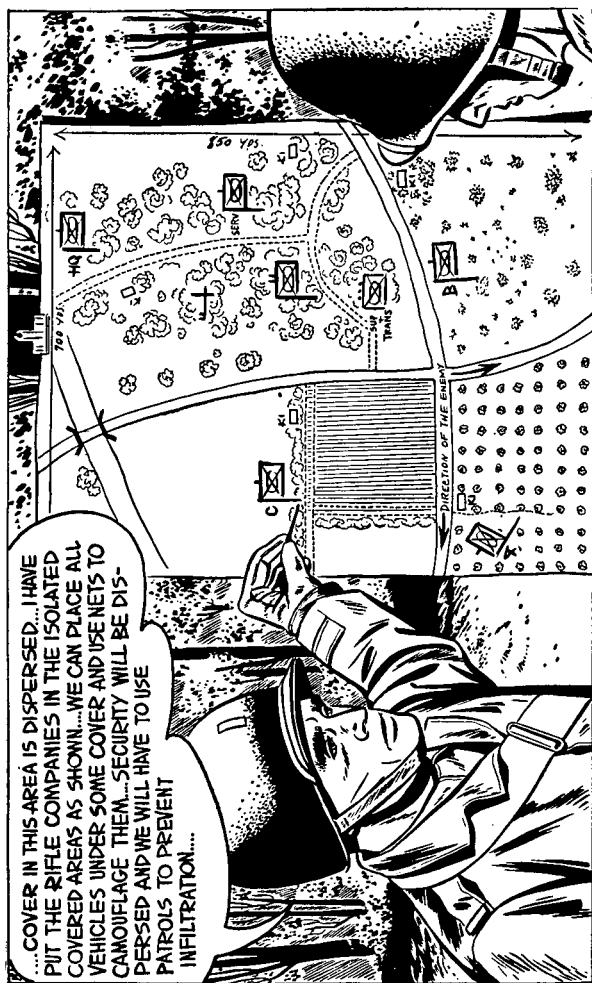


Figure 13. Bivouac area with dispersed cover. Company areas separated by open ground.

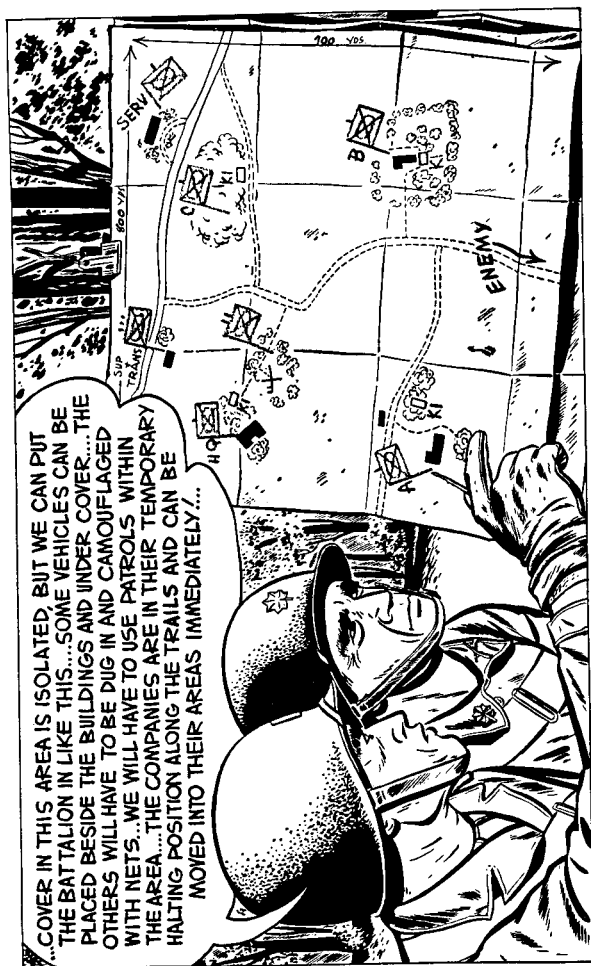


Figure 14. Bivouac area with sparse cover. Extensive camouflage is needed.

(d) To select positions along trails within the unit area where it may halt temporarily until final adjustments can be made.

(3) The billeting officer reconnoiters the area prior to making company and separate unit assignments and studies the terrain so as to advise the battalion commander on necessary camouflage and security measures. He then posts the company and unit guides.

c. MOVEMENT INTO BIVOUAC. Companies and separate units move into the area without halting. Established roads and trails are followed as near as possible. Vehicles follow one behind the other and no new trails are created unless necessary. (See figs. 15 and 16). After arrival in the area, each vehicle is moved by a previously reconnoitered route into its final position, and camouflaged. In this movement each vehicle is preceded by a dismounted man and is placed in position in such a manner that it can leave the bivouac area with a minimum of maneuvering. Individual tracks leading to separate vehicles are brushed out. New roads follow natural terrain lines and continue past the area to a logical termination, such as a road. (See fig. 17.)

d. ORGANIZATION OF BIVOUAC AREAS. Companies and units are placed in the bivouac area so that they can use their vehicles to defend the area. Security against air and ground attack is posted far enough away to give ample warning. Radio and direct wire communication is established at once. Command posts and kitchens are placed near the main trails leading into the area and as near the center of their respective areas as possible. Supply and service units are placed near the trails and away from other localities. The battalion medical detachment is placed near the center of the battalion area.

e. CAMOUFLAGE OF BIVOUAC AREAS. (FM 5-20). The battalion bivouacs by companies, and companies

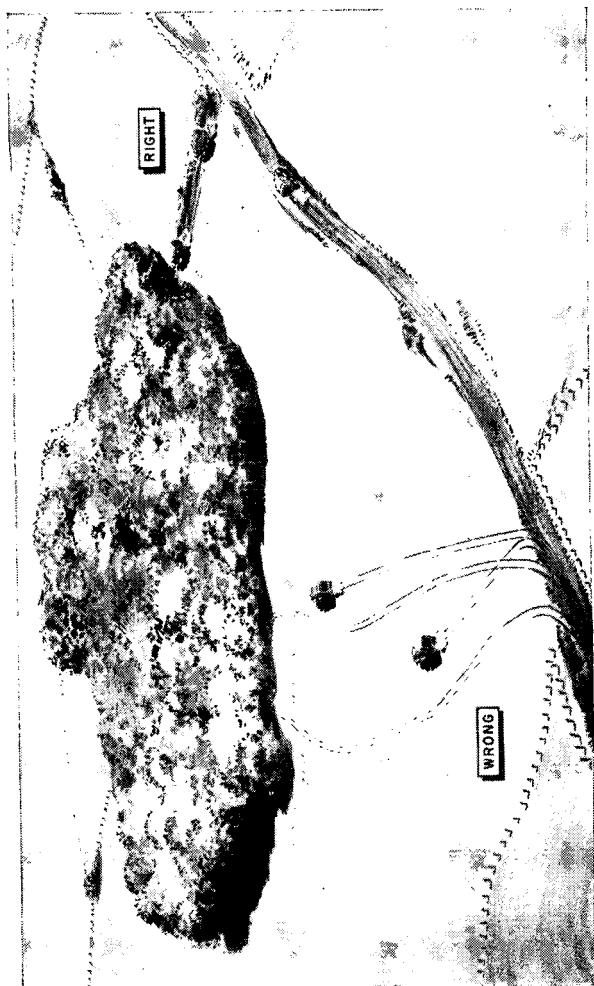


Figure 15. Do not cut across fields to concealed position. Move in single file along hedge lines, fences, or drainage ditches.

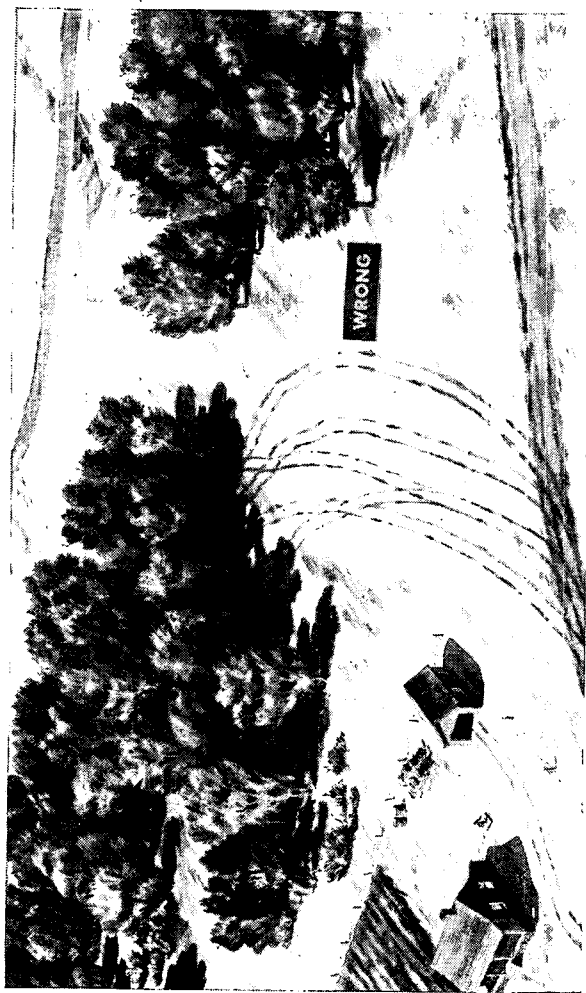


Figure 16. WRONG. Tracks here advertise vehicles in concealment.

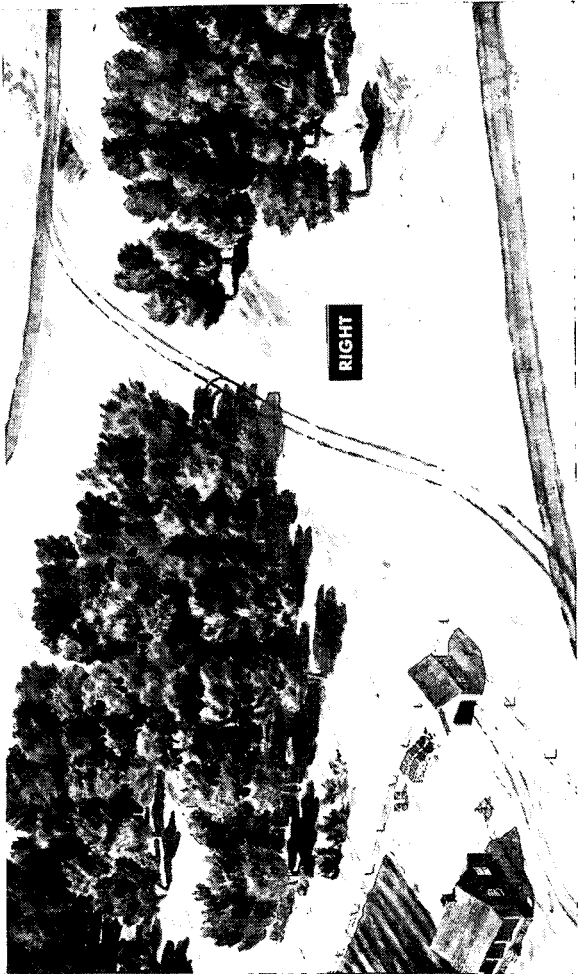


Figure 17. **RIGHT.** Keep vehicles in one track. Continue track past the position to a logical termination. Locate turnoff where least conspicuous.

by platoons, taking full advantage of concealment afforded by trees, brush, rocky terrain, buildings, and other surroundings. New trails are not made unless necessary and movement is kept to the minimum. When enemy planes are overhead, all personnel except the antiaircraft gunners remain under cover in their foxholes. If possible, foxholes are not dug in the open. The men are not allowed to congregate. When necessary, feeding may be decentralized by the use of carrying parties. Latrines are well concealed, spoil covered, and strict camouflage discipline is observed day and night.

f. SECURITY AGAINST AIR ATTACK. Air security in bivouac is obtained primarily by concealment and dispersion. Security measures include—

(1) Keeping one radio in battalion headquarters on the air warning net, if such is established, or on the higher command net.

(2) Posting air sentries and establishing an air warning system.

(3) Brushing out vehicular tracks which might give the position away.

(4) Enforcing rigid camouflage discipline.

(5) Digging of foxholes by all individuals.

(6) Enforcing fire control. All effective weapons are used to fire against hostile low-flying airplanes. Carbines, pistols, and submachine guns are not considered effective. All troops charged with this duty are constantly prepared for immediate action, but will fire only upon order of an officer or responsible non-commissioned officer. No airplane will be fired upon unless it has been clearly recognized as hostile or is positively identified as hostile, or attacks with bombs or gun fire. (See FM 100-5.)

(7) Caliber .50 machine guns are manned. They may be removed from the vehicles and mounted on ground mounts.

CHAPTER 5

SECURITY

24. GENERAL.

The fundamentals of security are covered in FM 100-5. For details of ground security measures, see FM 7-20.

a. Security includes all measures taken by a command to protect itself against annoyance, surprise, and observation by enemy forces. Adequate and timely information of the enemy is the basis of all security measures.

b. The unit commander is responsible for the security of his unit as a whole. He checks on and coordinates local security measures and provides for general security of the unit in accordance with plans of the higher commander.

25. ON THE MARCH.

Security against ground observation and attack while on the march is obtained by reconnaissance and by the use of advance, flank, and rear guards and patrols.

a. REINFORCED BATTALION ACTING ALONE. (1) Reconnaissance. When acting alone the battalion uses its reconnaissance platoon to reconnoiter 3 to 7 miles ahead of the advance guard and 1 to 2 miles on each side, depending on the road net. Squads are sent to reconnoiter ahead and to the flanks. The vehicles work in pairs. Any resistance met is immediately reported to the battalion commander. The reconnaissance platoon seeks to determine the

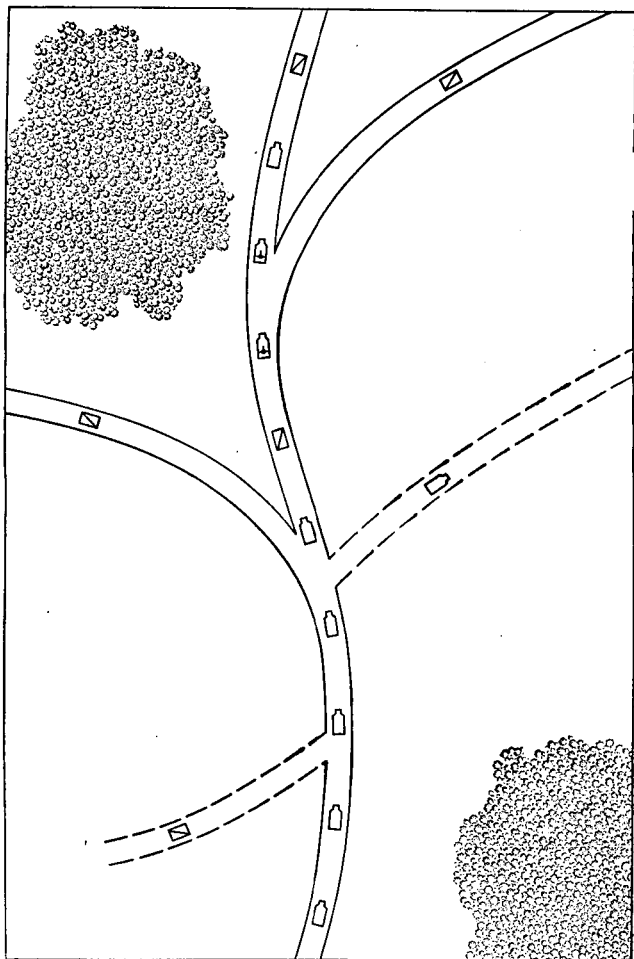


Figure 18. The reconnaissance platoon reconnoiters short distances to the flanks when the battalion is part of an interior marching unit.

strength, composition, disposition, and flanks of the enemy, and makes reports immediately to the battalion commander by the best means available. (See sec. II, ch. 9.)

(2) *Advance guard.* The advance guard of a reinforced infantry battalion acting alone frequently consists of a rifle company reinforced with a platoon of tanks, engineers, and one or more assault guns and mortars.

(a) The company (support) commander usually rides near the tail of the advance party. The battalion commander may march with the support commander. (See fig. 19.)

(b) The artillery usually marches between the support and the main body. An artillery observer usually marches with the advance party.

(c) The advance guard attacks boldly and attempts to overcome hostile resistance. If enemy resistance is too strong, it uncovers enemy defensive positions, including flanks. While doing this it serves as a covering force for the development of the main body and later as an element of the base of fire.

(3) *Flank guards.* (a) Flank guards are sent out 2 to 5 miles, depending on the road net, to protect the flanks of the battalion. Prior information of the route may indicate the necessity for attaching engineers. Flank guards for a battalion usually consist of rifle platoon, with attached supporting weapons. A reinforced rifle company may be used as a flank guard for a combat command.

(b) Flank guards protect the battalion from ground observation and surprise attack from the flanks. Points from which the enemy may observe the march of the column are reconnoitered. Movement is usually by bounds. Key positions, the holding of which will protect the main body, are occupied. A flank guard may split into two or more elements and use the leapfrog method of advance.

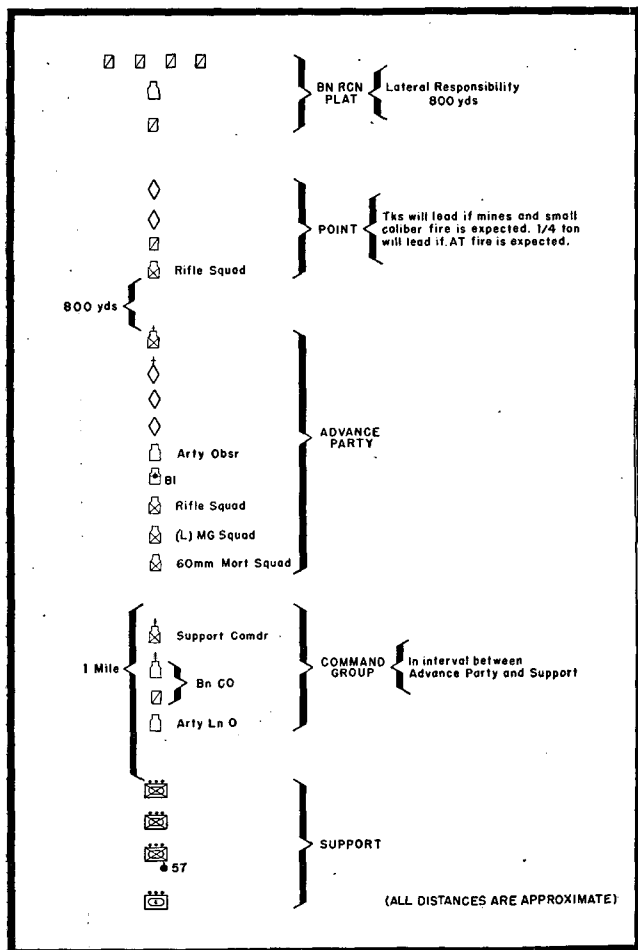


Figure 19. Reinforced company as advanced guard. Tanks are used in the point when it is expected that AT guns are not present and that only small arms fire will be encountered.

(4) *Rear guard.* (a) When the battalion is advancing, the rear guard usually consists of a rifle platoon with an assault gun attached. The rear guard follows the main body 5 to 10 minutes. When the enemy attacks from the rear, the rear guard fights a delaying action withdrawing a portion of its force under cover of the fire of the remainder, occupying positions that afford long range fields of fire and at the same time good routes of withdrawal.

(b) When the battalion is retiring, a stronger rear guard is detailed. The rear guard in this case is similar in organization to the advance guard. It consists of a rear party followed by a rear point. Such a force may consist of a rifle company reinforced with assault guns, machine guns, mortars, engineers, and tanks. Artillery moves between the rear guard and the main body. The artillery observer marches with the rear guard commander. The mission of the rear guard is to protect the main body from surprise attack.

b. REINFORCED BATTALION AS AN ADVANCE GUARD.

(1) The mission of an advance guard is to insure the uninterrupted advance of the main body and to protect it against surprise and observation by hostile ground forces. The action of the advance guard as a whole depends on the plan of the column commander. The advance guard commander must be careful that he does not commit the column commander to a line of action that will hinder freedom of movement of the main body.

(2) Considerations which influence the composition and formation of balanced and unbalanced columns (FM 17-100) influence also the composition and formation of main tactical groups within columns, including the leading group, the advance guard.

(3) When the battalion is detailed as an advance guard, one or two rifle companies may be detached to form tactical groupings with tank battalions within

the same march column. The battalion, less detachments, is usually reinforced by a field artillery battery, a light tank company, or both light and medium tanks, and an engineer platoon.

(4) The reconnaissance platoon is used for reconnaissance to the front and flanks even though a cavalry troop, mechanized, may be out in front. Elements of the reconnaissance platoon are not used in the point.

(5) Arrangements are made for patrols to the flank. Half-tracks, available $\frac{1}{4}$ -ton trucks, and light tanks, if present, are used for this purpose.

(6) Points where the enemy may have good observation are investigated. Woods and defiles are checked for possible enemy ambush.

(7) An artillery observer marches with the advance party.

(8) The artillery commander marches with the battalion commander, who has such staff as he desires, in the interval between the support and the advance party. Here they obtain early information of the enemy.

(9) The artillery battery marches in the interval between the support and reserve.

(10) The battalion command post is at the head of the reserve. The battalion executive officer or headquarters commandant conducts the march of the advance guard reserve. Company commanders (except the support commander) march with the battalion command post. Companies are conducted by the senior platoon leader, all platoon leaders being at the head of their respective companies.

(11) The column commander is kept informed of the situation. This is done by radio or messenger. He usually is near the advance guard commander or near the head of the reserve.

c. REINFORCED BATTALION AS FLANK GUARD. (1)

The reinforced armored infantry battalion may be used as a flank guard. If strong enemy forces are expected, artillery, engineer, and tank destroyer elements should be attached.

(2) When key points must be occupied and elements of the battalion are moved by leapfrogging or by successive bounds, light tanks, because of their mobility and fire power, are valuable attachments.

(3) As a flank guard the battalion protects the main body from observation and surprise attack by enemy ground forces. It furnishes its own advance, flank, and rear guards. The battalion can expect no help from the main body. The following is a guide for the planning and execution of duties of the flank guard:

(a) Select a route roughly parallel to the route of the main body. This, depending on the terrain, should be from 5 to 15 miles to the flank.

(b) Select critical points to be held until the main body passes.

(c) Detail detachments to hold these critical points. Such detachments may vary from a rifle squad to a reinforced rifle company, depending on the importance of the critical points. Critical defiles are held by road blocks in depth, each road block being covered by antitank and small arms fire.

(d) Definite instructions are given to each detachment as to where it is to go, what it is to do, where and to whom it is to send messages, how long it is to stay in position, and where it is to rejoin the battalion. If the time cannot be determined, arrange for relief by signal, radio, or messenger.

(e) If critical points are not to be occupied, a formation for the march that will adequately protect the column is prescribed. When the terrain is such that the enemy can attack from almost any point, march in

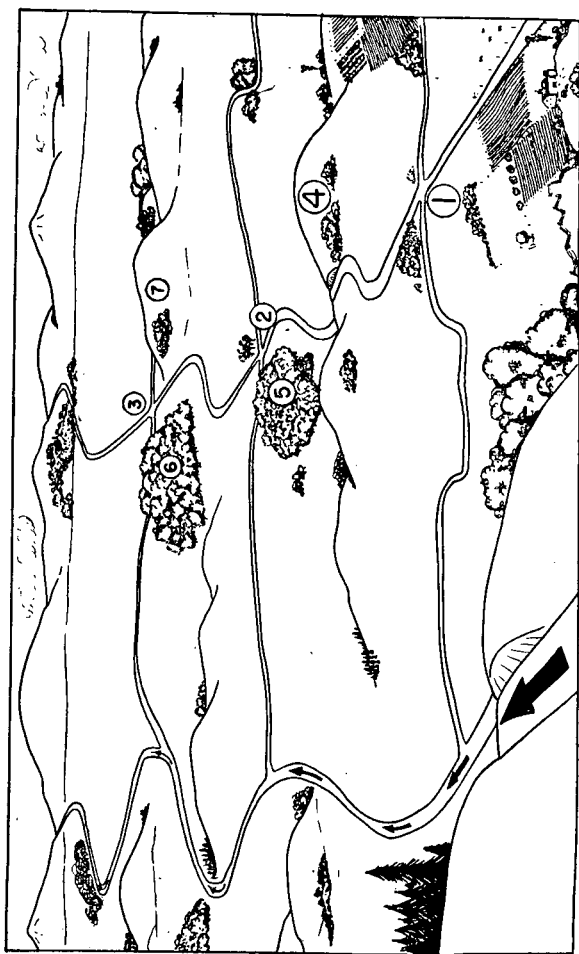


Figure 20. Flank guard action in rolling, broken terrain. Cross roads 1, 2, and 3 are held until main body passes. Wooded areas 4, 5, 6, and 7 are reconnoitered by dismounted troops.

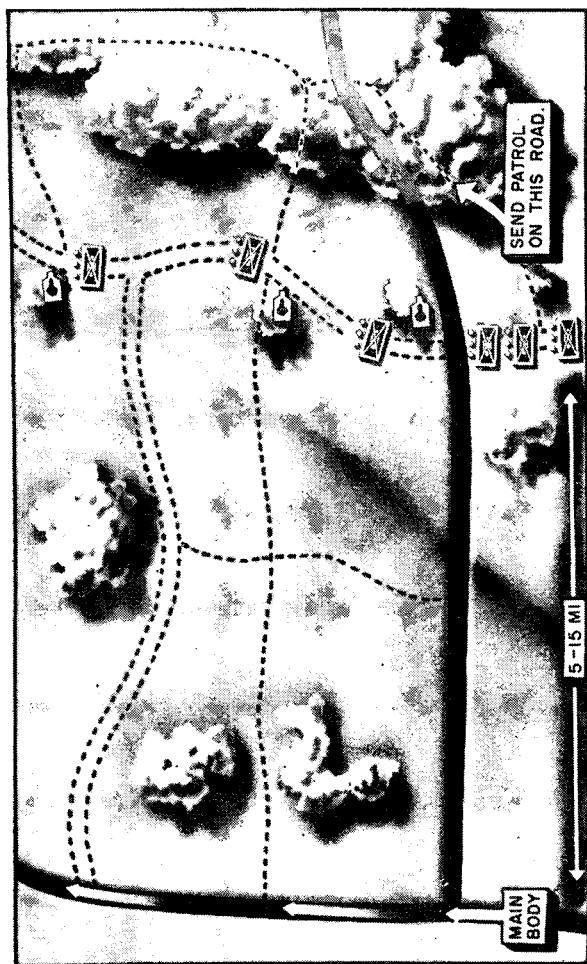


Figure 21. Flank guard action in level terrain. Guard marches in groups, covering roads, and each group supports another.

small groups covering the entire flank of the marching column, maintaining a mobile reserve, and arranging for rapid concentration to repel attack.

(f) If attacked, the advance guard concentrates and repels the attack. Hostile forces are prevented from by-passing flanks to strike the main body. A delaying action is fought, if necessary, by occupying successive positions.

d. **REINFORCED BATTALION AS A REAR GUARD.** (1) The reinforced battalion is rarely used as a rear guard except in withdrawal. The formation of the rear guard is the reverse of an advance guard.

(2) The rear guard in withdrawal protects the main body by delaying the enemy and making him fight small time-consuming actions. The rear guard must not become heavily engaged unless necessary for the security of the main body. Then the rear guard sacrifices itself in the execution of its mission.

e. **ARMORED INFANTRY BATTALION AS PART OF THE MAIN BODY.** As part of the main body the battalion is responsible for local protection to its flanks to guard the battalion against surprise attacks. Men in vehicles are sent to the flanks on roads for distances up to $\frac{1}{2}$ mile to observe until the battalion has passed. All possible observation points overlooking the line of march are investigated. The reconnaissance platoon, supplemented by half-tracks or available $\frac{1}{4}$ -ton trucks, is used for this purpose. (See fig. 18.)

26. OUTPOST.

a. An outpost is a security detachment to protect a resting command or a defensive position against annoyance, surprise, and observation by enemy ground forces.

(1) The outpost furnishes security in all directions from which enemy ground forces are capable of attacking.

(2) The strength and composition of the outpost varies with the distance from the enemy, and his mobility, armament, and attitude; the terrain; time of day; size of the command to be secured; degree of resistance the outpost is expected to offer; and the special duties assigned to it. The reinforced battalion may be detailed as an outpost of a larger command. When acting alone the battalion details its own outpost. Prior to establishment of an outpost the advance, flank, and rear guards form a march outpost. (See fig. 22.)

b. REINFORCED BATTALION AS A MARCH OUTPOST.

(1) When the reinforced battalion is an advance guard the battalion commander, upon receiving the halt order designating the battalion march outpost sector, plans for and issues orders for the march outpost.

(2) The march outpost is planned as follows:

(a) Sectors of responsibility are given to companies or platoons. These units are reinforced depending on the mission assigned.

(b) Likely avenues of approach within the battalion sector are covered.

(c) Artillery is placed to cover the most likely avenues of approach for hostile troops.

(d) Reserves are located to repel hostile attack.

c. MARCH OUTPOST FOR A REINFORCED BATTALION ACTING ALONE. See figure 22.

d. REINFORCED BATTALION AS AN OUTPOST. For organization of the outpost, see FM 100-5.

(1) When on outpost duty the battalion should be reinforced by engineers and tanks, and should be supported by artillery and tank destroyer elements.

(2) The outpost for a force as large as a combat command should protect the command from observed light artillery fire, patrolling avenues of approach at least as far as 10,000 yards from the bivouac.

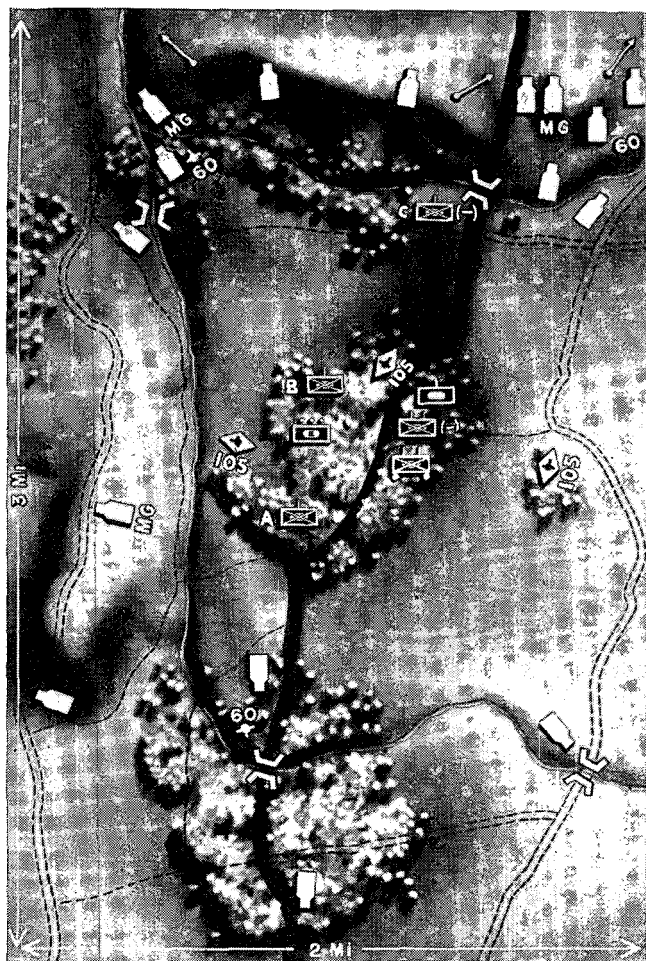


Figure 22. March outpost for reinforced armored infantry battalion.

(3) The procedure in establishing an outpost is as follows:

(a) On receiving the order for the outpost, make a map reconnaissance, divide the area into supports, establish the line of supports (OPLR) and the line of observation (OPLO), and assign units to support sectors.

(b) Determine places for detached posts.

(c) Locate the reserve.

(d) Determine artillery missions.

(e) Plan for patrols and recognition signals.

(f) Place plans on a map or overlay and issue orders. (See FM 101-5 for form of an order.)

(g) After supports and outguards have been established, inspect and coordinate the supports with each other and with supports in adjacent unit sectors. Make necessary adjustments.

(h) Protect road blocks with antitank and small arms fire.

(i) Make plans for the reserve to counterattack enemy penetrations of the OPLR.

(4) Conduct of the outpost is as follows:

(a) A patrol visits each outguard at least once each hour. Special recognition signals are used so outguards will not fire on patrols. Contact between supports are established from right to left.

(b) Patrols from the reserve visit detached posts and cover routes to the line of security (LS). If the battalion has only a sector of the outpost, the reserve sends visiting patrols to the nearest support of each adjacent unit.

(c) The reserve is held in readiness to move to any threatened point.

(d) Radio is silent, except in case of a strong enemy attack. Lights are not used.

(e) Artillery plans supporting fires. Medium tanks, if present, and not engaged in counterattacks, may be used to reinforce artillery fires. Special sig-

nals are arranged for firing certain predesignated concentrations.

e. **OUTPOST FOR A BATTALION ACTING ALONE.** When acting alone, whether or not reinforced, the battalion establishes an outpost in the manner described in *d* above. Unless enemy capabilities and terrain indicate otherwise, a perimeter defense is established. Such an outpost must be far enough out to protect the bivouac from small arms fire, but not so far that a major element of the battalion may be cut off by the enemy. That is, supports must not be beyond tactical supporting distances of the reserve or main body.

27. CAMOUFLAGE DISCIPLINE.

a. **GENERAL.** All commanders are responsible that camouflage discipline is maintained. They must make frequent and thorough inspections to see that camouflage measures are being carried out. Air, ground, and gas sentries are given additional duties of enforcement of camouflage discipline. Until troops are thoroughly trained, patrols may be detailed to move through the area to check on these measures. However, the maximum number of men are allowed to rest in bivouac; details must be kept to the minimum.

b. The following breeches of camouflage discipline should be corrected:

(1) Improper location and concealment of vehicles.

(2) Improper use of camouflage materials.

(3) Improper digging of fox holes. All excavation should be in covered position if possible. The fresh earth is covered with sod or dry grass and weeds to conform to surrounding vegetation.

(4) Reflection of the sun on vehicular mirrors, windshields, or other bright objects.

- (5) Fires and smoking.
- (6) The movement of individuals in open spaces and the congregating of men.
- (7) Improper use of lights.
- (8) Improper starting of motors. It is best to start motors at dusk or dawn, when neither the smoke or exhaust flash can be seen at a distance.

28. AGAINST CHEMICAL ATTACK.

Constant surveillance against chemical attack is necessary at all times. One officer in the battalion is trained as a gas officer, and each company has at least one noncommissioned officer trained in defensive measures. The gas officer is in charge of chemical training, and all men are taught individual and equipment protective measures. Sentries are alert for chemical attacks in bivouacs and assembly areas. Antiaircraft gunners are on the alert for gas attacks from the air. Adequate warning systems are set up, with all personnel being acquainted with the warning signals. (For details see FM 21-40.)

CHAPTER 6

OFFENSIVE ACTION

Section I. GENERAL

29. GENERAL.

a. MISSIONS. The armored infantry battalion in offensive action is used as—

(1) An assault element, attacking on a predetermined front to seize designated objectives.

(2) A support element, supporting assaulting troops and consolidating gains of the front line units.

(3) Reserves, providing depth for the attack and flank and rear protection for the attacking element.

b. ATTACKING WITH TANKS (FM 17-36). The armored infantry normally is employed with tanks in offensive action. The infantry attack is coordinated with the tank attack to—

(1) Protect tanks from enemy personnel executing antitank measures.

(2) Seize ground from which tanks may attack.

(3) Follow the tank attack closely, assisting by fire and seizing the objective, mopping up enemy resistance, and protecting the tank reorganization.

(4) Form a base of fire for the tank attack.

(5) Remove or destroy obstacles holding up tank attacks.

c. TANK SUPPORT (FM 17-36). Tanks, conversely, assist infantry attacks by—

(1) Supporting by fire.

(2) Neutralizing hostile automatic weapons.

(3) Neutralizing the objective until arrival of the infantry.

(4) Breaking up counterattacks.

(5) Neutralizing or destroying hostile reserves, and destroying or disrupting command, communication, and supply installations.

(6) Making paths through wire and other obstacles.

d. For details on the employment of infantry and tanks, see FM 17-36.

30. CHARACTERISTICS OF THE ATTACK.

a. **CHARACTERISTICS.** The armored infantry battalion in the attack makes full use of its mobility, firepower, and light armor protection from small arms fire.

b. **MOBILITY.** The armored infantry uses its transportation to move quickly to initial attack positions where the infantry dismounts and fights on foot. Vehicles, except those used for fire support, are then withdrawn to the best available concealed and protected positions. Here they are dispersed and local security established. The vehicles may be withdrawn by company or assembled as a battalion group. The reserve company or companies may remain with vehicles in concealed positions until committed to action or required to change position. When the objective is taken, vehicles are moved forward to new positions as necessary.

c. **FIRE POWER.** In the attack the battalion utilizes all available weapons, including dismounted vehicular weapons when these are not needed for protection of vehicles.

d. **ARMORED PROTECTION.** The half-track personnel carriers provide protection for the troops against small-arms fire up to close ranges. The armor also gives protection against bomb and shell fragments. Troops are transported as far forward as possible in each situation; terrain, cover, and the type of weapons available to the enemy governing the dismounting,

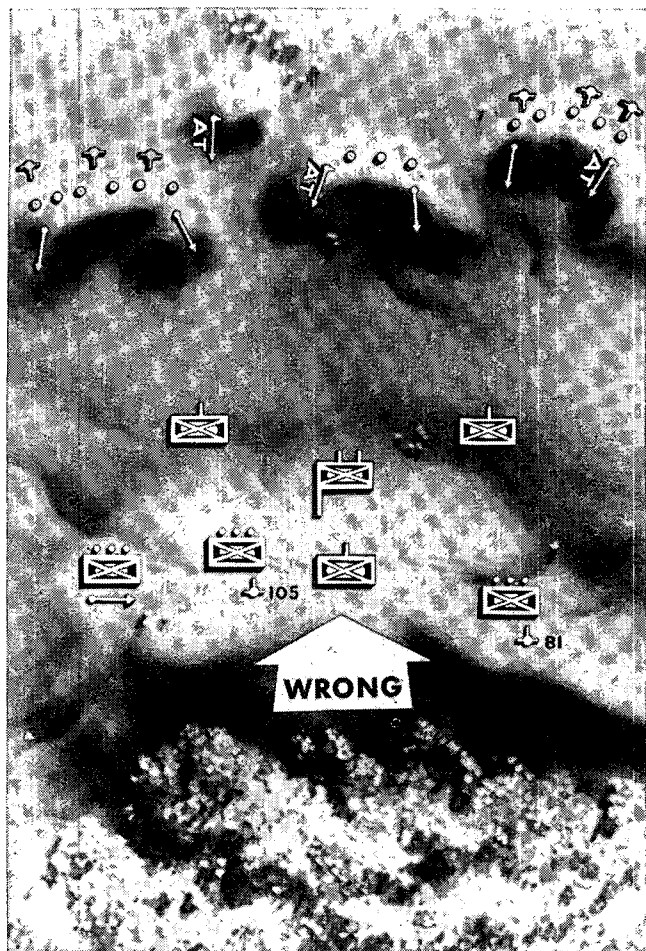


Figure 23. Do not commit troops without fire support.

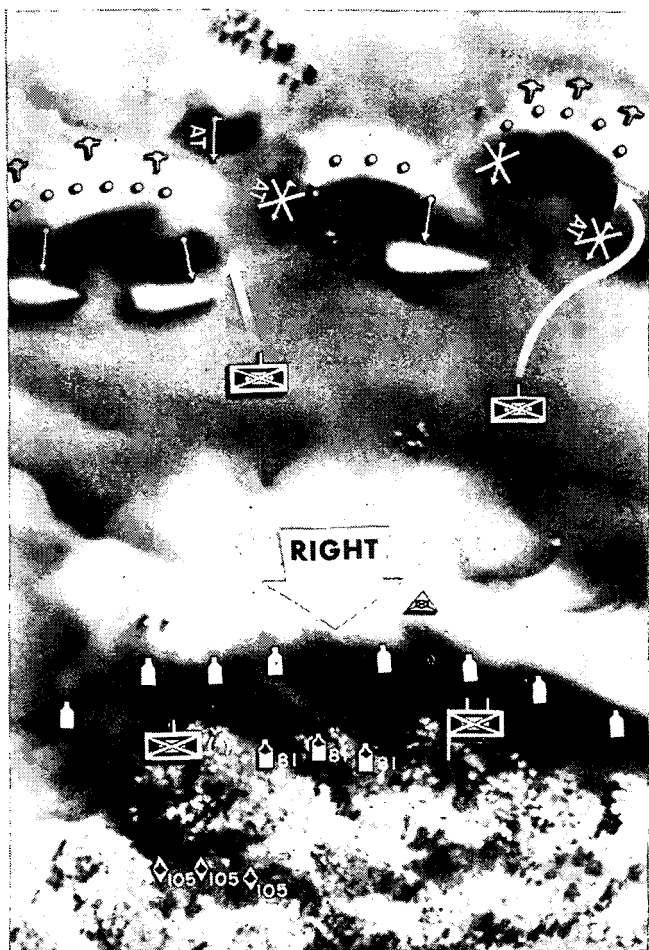


Figure 24. Use one company to support by fire. Vehicular weapons are used if practicable.

The vehicular weapons are used to protect the attacking troops against air attack. Armor on the half-track does not protect crews against antitank weapons and direct hits by assault guns and light artillery.

SECTION II. APPROACH MARCH

31. GENERAL.

a. The approach march formation consists of small columns—squad, section, or platoon—distributed in some depth and on a broad front; it is, in effect, a partial deployment. Troops may be mounted if terrain permits, or dismounted. The approach march begins when the unit is forced off the road by distant shelling, strafing, or a threat of these; and ends when the leading echelon crosses the line of departure or comes under effective small-arms fire. If the approach march is started mounted, troops dismount behind the line of departure to make a dismounted attack or, if enemy fire is ineffective and tanks precede, the infantry may remain in vehicles until forced to dismount by effective enemy fire, or terrain, or to deliver an attack.

b. The battalion ordinarily initiates the approach march upon receipt of a development order from the combat command. However, when necessary to reduce losses from artillery or air attack, the battalion commander promptly initiates development. Orders of the battalion commander are issued at the earliest practicable moment. Depending upon his knowledge of the situation, the orders may be complete at the beginning of the march or issued in fragmentary form as the march progresses. Development orders include—

- (1) Information of the enemy and friendly troops.
- (2) Mission.

- (3) Assembly area or other final march objective.
- (4) Phase lines.
- (5) Zone of advance, including frontages and directions of advance for elements of the battalion.
- (6) Formations.
- (7) Communications.
- (8) Axis of advance of march command post.
- (9) Vehicular control.
- (10) Missions of elements of the battalion.

32. FORMATIONS.

The battalion in the approach march generally is disposed in a wedge, inverted wedge, column of companies, or echeloned formation, depending upon the terrain and the situation. Conditions under which the various formations probably are used are—

a. WEDGE. The wedge formation, with one rifle company in front, one echeloned to the right rear, and the other to the left rear, is used when neither flank is secure or when the situation indicates an envelopment toward either flank may be required.

b. INVERTED WEDGE. The inverted wedge, with two rifle companies to the front and one in the rear, is used when the battalion front is wide or visibility is restricted.

c. COLUMN OF COMPANIES. A column of companies formation is used when the zone of advance is narrow and flanks are secure.

d. ECHELON. An echelon formation is used when a flank is exposed. The battalion is echeloned towards the exposed flank.

33. ZONE AND DIRECTION.

a. The battalion zone usually is established in orders from higher headquarters and the advance is through this zone. The zone limits are designated by easily distinguished terrain features along the lateral limits.

b. Frontages and direction of advance for subordinate organizations are prescribed by the battalion commander in his order. The subordinate units are responsible for their individual fronts, the troops being disposed across the respective fronts according to the terrain, enemy, and situation.

34. RECONNAISSANCE.

Normal reconnaissance, as prescribed in chapter 9, is conducted. This reconnaissance is continuous. Maps and air photographs are utilized by the battalion commander, and friendly troops to the front and flanks are contacted for additional information.

35. SECURITY.

Security is conducted in accordance with chapter 5.

36. COMMUNICATION.

Communication is by messenger, visual signals, and radio, when not silenced. Telephone wires are not laid until initial observation and command posts are established. (For details on communication, see ch. 3.)

37. CONTROL OF VEHICLES.

Vehicles are controlled by the senior officer in each march unit. If company commanders are marching with the battalion commander, the senior platoon leader assumes control of the marching unit.

38. SUPPORTING ELEMENTS.

a. Organic supporting elements of the battalion are distributed within the marching column in accordance with their employment, as prescribed in chapter 9.

b. If artillery is attached it is disposed within the marching battalion in accordance with the situation,

being governed by the formation of the battalion, the proximity of the enemy, the strength of friendly forces in front of the battalion, and the artillery missions. However, such artillery always is placed where it is protected against sudden enemy thrusts or enemy patrols. The artillery liaison officer accompanies the battalion commander, and a forward observer is with each forward rifle company.

c. Tanks are employed in accordance with FM 17-36.

39. CONDUCT OF APPROACH MARCH.

a. Units of the leading elements move aggressively from phase line to phase line, or as directed by the battalion commander. Movement is cross-country, if possible, in order to take advantage of all natural concealment.

b. Personnel is kept alert, and all crew-served weapons are manned to counter a surprise attack by the enemy. When covering detachments are strong, anti-aircraft and antitank weapons may be sent ahead, with riflemen for local security, to establish anti-aircraft and antimechanized security for defiles and the battalion assembly area. Regular halts are omitted, the only halts being on phase lines where units are reorganized and reports are sent to battalion headquarters. A march outpost is established when the situation demands a long halt or when orders for a long halt are received from higher headquarters.

40. ASSEMBLY AREAS.

a. GENERAL. When the battalion is protected to the front by a covering detachment or by a battalion to be relieved, an assembly area, or areas, may be established. The attack is organized, equipment not essential to combat is dumped, extra ammunition is issued to the men, men are given a chance to rest

and check their weapons and vehicles, and final orders are issued in the assembly area or areas.

b. REAR AND FORWARD ASSEMBLY AREAS. When the assembly area is a great distance from the line of departure, it may be used as a rear assembly area. In this case, a more forward area is chosen for a short halt, where final plans are completed. Movement from the rear assembly area to the forward assembly area is under cover of darkness, when possible, and all precautions are taken to preserve secrecy.

c. SECURITY. Security is the responsibility of all commanders, with each company being responsible for its own sector. The area is organized similar to a bivouac area, the extent of organization being governed by the time available.

d. LAUNCHING THE ATTACK. The attack may be launched from the forward assembly area, at a designated line of departure, or from an attack position just to the rear of the line of departure.

e. DISPOSITION OF VEHICLES. When terrain difficulties make it impossible to move the vehicles beyond the assembly areas, they remain in the forward assembly area under control of the company maintenance officers and battalion motor officer. The vehicle drivers remain with their vehicles. It is a command decision whether or not a gunner remains with each half-track mounting a machine gun. The commander leaves one gunner with each half-track mounting a machine gun when—

- (1) Vehicles are used to support the attack.
- (2) Plans are made to use the vehicles to support a counterattack.

(3) Hostile ground or air activity is such that manning of the machine guns is necessary for protection during movement of vehicles.

(4) The situation warrants the leaving of additional men with the vehicles for security purposes due

to the conditions of terrain, disposition of friendly troops, or enemy activity.

Section III. THE ATTACK

41. GENERAL.

The armored infantry battalion ordinarily attacks as a part of a larger force, such as a combat command. However, the battalion may be used at times to attack independently on a special mission. The higher headquarters assigns the mission or missions, designates the zone of action or frontage, designates supporting or attached units, and fixes the time of the attack. Intermediate terrain objectives may be prescribed.

42. CHARACTERISTICS OF THE ATTACK.

a. The battalion commander plans his attack to insure maximum fire by the organic and attached weapons. Full use is made of the mobility of the battalion to bring added firepower to points where needed.

b. The battalion attack plan is formulated in accordance with the possibility of the three following situations:

(1) *Meeting engagement.* A meeting engagement is an unexpected meeting of hostile forces, neither being fully disposed for combat. When the battalion is moving forward, the commander is prepared at all times to take full advantage of the battalion's firepower and maneuverability. The battalion is committed promptly, as aggressiveness often is the deciding factor in a meeting engagement. The battalion continues on its mission when resistance is overcome. When a meeting engagement is likely, the supporting weapons often are decentralized, being attached to rifle companies.

(2) *Fluid situations.* The enemy, at times, is anxious to break off the action. In situations of this type the maneuverability of the armored infantry battalion is used to the fullest extent. Attempts are made to encircle the enemy and the attack is continuous, hindering the enemy from withdrawing to consolidate on another defense area. Contact should never be lost. Full use is made of the vehicular machine guns in this type of action.

(3) *Organized position.* In an attack upon an organized position, plans for coordination and special missions are worked out in detail. Preparations are as elaborate and detailed as is consistent with time available in launching the attack. Supporting troops and weapons are given definite missions, and the attack is characterized by an initial deliberate probing and neutralizing the enemy defense prior to the assault.

43. METHOD OF ATTACK.

a. FIRE AND MANEUVER. The battalion attacks by fire and maneuver. Envelopment of the enemy is sought. The armored infantry battalion, due to its mobility, is especially suited for operating as a flank unit for a large force. When used as an interior battalion, the initial attack is frontal. However, opportunity for flank attacks is exploited.

b. SUPPORTING FIRES. Supporting weapons are concentrated on those positions which are holding up progress of the battalion. Fire of these weapons is shifted as the need arises.

c. POWER OF ATTACK. The power of the attack may be increased by narrowing the zone of action. Successive objectives may be assigned in order to consolidate and coordinate the drive for the assigned objective.

d. FEINTING. Part of the battalion often is used to launch a secondary attack in order to deceive the enemy as to where the main attack is being launched. This secondary attack may become the main attack.

e. USE OF VEHICLES. In the attack some vehicles may be placed in position defilade to support the attack by fire. Those vehicles of assault companies which are not used for fire support are placed under the best available cover and concealment in rear of their respective companies and displaced, each platoon's vehicles being under control of a noncommissioned officer of that platoon. These vehicles are placed to cover, by fire, the flanks of the assault companies. As the attack advances vehicles are moved forward as directed by the company commander. In some cases vehicles may be grouped by battalion. When covered routes are available and the terrain can be traversed, vehicles are used to move the support platoon when it is committed to action. The reserve company usually retains its vehicles and moves in them either when following the attack or when moving to a line of departure.

44. RECONNAISSANCE.

Upon receipt of the attack order from higher headquarters, the battalion commander conducts a personal reconnaissance and directs that of his staff so as to obtain information of the following:

a. Location of suitable company objectives and zones of action.

b. Critical points or areas likely to be occupied by the enemy.

c. Areas likely to be swept by hostile flat trajectory fire.

d. Vehicular and dismounted routes of approach.

e. Location and type of obstacles, which are likely to hinder the movement of vehicles and dismounted troops.

j. Suitable positions for supporting weapons.

g. Positions for vehicles.

h. Suitable locations for the reserve, supply, and evacuation facilities, and the battalion command and observation posts.

i. Location of friendly troops.

j. Likely avenues of enemy attack.

45. FORMULATION OF PLAN.

Consolidating previous information, that acquired by the personal and staff reconnaissance, and information acquired by the reconnaissance platoon and patrols, the battalion commander decides how best to employ elements of the battalion and attached units. The plan consists of two basic elements, the plan of maneuver and the plan of supporting fires. In addition, the plan covers the administrative details of supply and evacuation and establishment of signal communication.

46. PLAN OF MANEUVER.

a. GENERAL. The battalion commander's plan of maneuver is his plan for employment of the battalion elements for accomplishing the mission. It includes—

(1) Determination of company objectives.

(2) Attack positions.

(3) Reserves.

(4) Formation.

(5) Zone of action.

(6) Time of attack.

(7) Supporting fires.

b. OBJECTIVES. The higher headquarters attack order usually gives the battalion the mission of capturing one or more terrain features. The battalion commander, in turn, assigns the attacking rifle companies intermediate terrain features as successive objectives. Initial objectives should be—

(1) Easy to recognize.

(2) Visible from the line of departure or previous objective.

(3) Such that their capture promotes the accomplishment of the battalion mission.

(4) Within effective range of battalion supporting weapons.

c. ATTACK POSITIONS. Attack orders from higher headquarters direct the battalion to attack from a given area. The line of departure is usually designated by the battalion commander.

d. RESERVES. A portion of the battalion, primarily from the rifle companies, initially is held in reserve. The size of the reserve depends upon the mission and situation, varying from one platoon to two companies. Missions of the reserve include—

(1) Repelling counterattacks.

(2) Replacing exhausted or disorganized attacking elements.

(3) Exploiting hostile weaknesses developed by the attacking troops.

(4) Striking the final blow necessary to capture the objective.

e. FORMATION. The formation of the battalion depends upon the strength of the main and secondary attack and the number and type of attached supporting units. Two rifle companies, with supporting elements, generally are used to make the attack, with the third rifle company in reserve. One company or part of a company can be used in a secondary attack.

f. ZONE OF ACTION. A zone of action with a width of 500 to 1,000 yards generally is assigned a battalion in attack.

g. TIME OF ATTACK. The time of attack generally is given in attack orders from higher headquarters. It may be announced as a definite hour, or subordinate elements may be directed to attack on prescribed signal or at the time a prescribed tactical action occurs.

h. **SUPPORTING WEAPONS.** Fires of the supporting weapons are coordinated with the organic weapons. Supporting artillery is considered. Alternate plans are made and signals prescribed for changing the fire of any support weapon or weapons to alternate targets.

47. CONTROL.

Control of the battalion is exercised by communication, clear concise orders, and frequent personal contact on the part of the battalion commander and staff officers with the combat companies. The battalion observation post is as far forward as practicable, with communication being established between the observation post and command post. (For details, see ch. 3.)

48. ATTACK ORDERS.

The battalion commander notifies subordinate commanders of their roles in the attack plan immediately after formation of the plan. Fragmentary and warning orders are used freely, in order to keep the subordinate officers abreast of the situation. (For details on orders, see FM 101-5.)

49. FLEXIBILITY.

As the attack progresses, it is necessary for the battalion commander to change his plan, due to unforeseen circumstances. Drastic changes are avoided as much as possible. However, favorable developments are exploited without hesitation, and new obstacles are overcome in the best possible manner. The battalion commander alters his plans as necessary. This is done without halting the attack, if possible.

50. LOCATION OF COMMANDER.

The battalion commander keeps informed of the situation by remaining at the observation post or visiting

attacking elements during the attack. Staff members also visit the attacking companies, assisting in coordination of effort and in control. The executive officer normally remains at the command post.

51. CONDUCT OF THE ATTACK.

a. The attack begins when the leading company crosses the line of departure. The leading elements move forward in deployed formation, holding fire until within effective range of the enemy.

b. A uniformly held or continuous line of hostile resistance is rarely encountered. Irregularities in resistance and in facilities for advance afforded by the terrain and by supporting fires result in the delay of some units, while others are able to advance as scheduled. The retarded unit is assisted by the shifting of supporting weapons or fire from the more advanced units. However, an advanced unit is not held up to preserve a general alignment or in order to adhere rigidly to the attack plan. An advance element is protected by advancing the supporting weapons and the reserve.

c. Full use is made of vehicular and supporting weapons. During the advance, the vehicles and supporting elements are moved forward as soon as practical. Determination of time and method of displacing vehicles forward may be delegated to individual commanders. Displacement normally is by bounds.

d. The reserve is moved forward by the battalion commander as the attack progresses, keeping within supporting distance of the attacking elements. The reserve is used to exploit success rather than redeem failure, except in cases of emergency. It is committed whenever an opportunity develops to capture the battalion objective. The reserve is not committed piecemeal, but its full strength is hurled at the enemy's weak point or points.

e. Security measures are planned on the initiation of the attack and are continued in force or modified according to the progress of the attack. (For details, see ch. 5.)

52. ASSAULT.

a. Whether attacking with tanks or alone, the assault and seizing of the objective is the same, except that the tanks usually pin down the enemy until the infantry closes and consolidates the area in coordinated action.

b. The assault is conducted by swiftly closing with the enemy and annihilating him or driving him from the objective. If the battalion or any part of it is held up, the battalion commander calls for previously prepared support fire, including assault guns, mortars, artillery, and tanks, if the terrain is such that the tanks cannot close on the objective. The supporting fires are lifted by a prearranged signal or at a designated time. The assaulting elements then deliver assault fire and close with the enemy.

53. ADVANCE THROUGH A HOSTILE POSITION.

a. Initial plans and orders of the battalion commander cover the attack as far as the initial objective. Companies move continuously toward the objective, halting only for a short reorganization or when held up by heavy hostile fire.

b. When the objectives designated in the initial orders are reached, the battalion commander quickly reorganizes the attack and issues orders for its continuance. Speed in reconnaissance and issuing of orders is vital in order to permit the exploitation of the initial success.

c. Supporting weapons are brought forward at the earliest possible moment in order to afford protection against counterattack and support the continuation of the attack.

d. Contact with the enemy is maintained at all times.

54. FINAL OBJECTIVE.

a. Upon reaching the final objective, the battalion commander immediately consolidates the position, prepares to defend the newly won ground, and pursues the enemy by fire. The battalion is reorganized and casualties in key positions are replaced. The ground is organized and fire plans are made for defense against counterattack in accordance with chapter 7. Higher headquarters is notified. If ordered to continue, the attack is renewed and the enemy pursued at the earliest possible moment.

b. If hostile forces are stronger than expected and the battalion is unable to advance to the final objective, the troops dig in. Higher headquarters is notified immediately and necessary adjustments are made.

Section IV. BATTALION IN RESERVE

55. GENERAL.

a. POSITION. An armored infantry battalion held in reserve by the combat command or higher headquarters is placed within supporting distance of the attacking units. The position should provide the maximum protection against enemy air and ground observation, artillery fire, and mechanized attack.

b. INITIAL MISSION. Initially the battalion or component parts are assigned one or more of the following missions:

(1) To protect the flanks and rear of an assigned area.

(2) To maintain contact with adjacent units.

(3) To assist attacking battalions by fire of heavy weapons.

c. **SPECIAL MISSIONS.** Detachments of the reserve battalion often are assigned special missions. The detachments return to the reserve upon completion of their mission or, if possible, before the battalion is committed to action. These missions include—

(1) Assisting attacking tanks in clearing mine fields and other obstacles.

(2) Supporting the attack by assault guns, mortars, and heavy machine guns.

(3) Providing security for evacuation of disabled vehicles of the attacking infantry.

d. When committed to action the battalion may be given missions to—

(1) Exploit a success of the attacking forces.

(2) Protect a flank exposed by the advance of the attacking forces.

(3) Envelop or outflank resistance that is holding up the attack.

(4) Meet hostile counterattacks.

(5) Relieve a depleted, disorganized, or exhausted battalion.

56. ACTION OF THE BATTALION COMMANDER.

a. The battalion commander of a reserve battalion keeps abreast of the situation by liaison, observation, and frequent visits to higher headquarters.

b. Plans for the commitment of the battalion to any type of action and for any expected mission are formulated. Primary consideration is given plans for the most likely action of the battalion, but the battalion commander must be ready at all times to carry out any assigned mission. It is the battalion commander's responsibility to visualize all possible situations and the best means for putting the battalion into action under any situation.

c. Changes in the situation make it necessary for the battalion commander to constantly change his plans.

d. Patrols and observers are used to assist in gathering information; also providing local security against infiltrating enemy troops.

e. When the battalion is committed to action, the attack is conducted in the normal manner.

DEFENSIVE ACTION

57. GENERAL.

a. MISSIONS. The armored infantry battalion in defense is used as—

(1) *Security force.* When a strong combat outpost is desired, the combat command may use elements of an infantry battalion or the entire battalion to establish a combat outpost. When the battalion withdraws through the main line of resistance, units return to assembly positions in the rear and take up reserve missions.

(2) *Holding garrison.* The battalion is used to defend an area along the main line of resistance.

(3) *Reserve.* Reserve battalions are employed with other reserve organizations to protect the flanks and rear, limit penetrations and counterattack. When tanks are used in the counterattack, infantry support is given.

b. OPERATING ALONE. When an infantry battalion is occupying a defensive area alone, elements of the battalion are employed on all three of the missions mentioned above.

58. COORDINATION WITH OTHER TROOPS.

a. The use of supporting and attacked troops is considered in making defensive plans. Artillery, tank destroyer, tanks, engineers, and chemical mortar platoons may be available, and the battalion commander before completing plans, contacts higher headquarters to determine what supporting troops are available for defense of the battalion area.

b. Supporting troops generally are employed as follows in defense plans:

(1) Some tank destroyers, preferably towed, may be employed to strengthen the infantry antitank defense. Usually the bulk of the tank destroyers are held in mobile reserve. (See FM 18-5.)

(2) Tanks, held in the reserve, are used to counter-attack, according to prearranged plans. (See FM 17-36.)

(3) Artillery is used to support by fire.

(4) Engineers are used to assist in preparing emplacements and laying out mine fields and obstacles.

(5) Chemical mortar platoons are used to supplement the battalion mortar platoon fire.

c. ANTITANK PLATOON. (1) *General.* The antitank platoons of the rifle companies comprise the main antimechanized defense for the battalion. The platoons are used to cover all possible approaches of mechanized attack and are made mutually supporting.

(2) *Surprise.* In order to achieve surprise, the antitank guns are not used on secondary targets, such as enemy emplacements, machine guns, and similar point targets, unless tank or tank destroyer units are in direct support of the battalion. Rigid fire control is maintained to insure maximum surprise.

(3) *Local security.* The antitank guns are protected by riflemen and rocket launchers. Standard antimechanized warning signals are made known to all men of the battalion.

(4) For details on the employment of the antitank guns see FM 17-40.

59. FRONT LINE POSITION.

The armored infantry battalion may be used in a front line position along the main line of resistance. The battalion normally is assigned a frontage of 800 to 1,800 yards, depending on terrain and strength of the

unit. The depth usually varies from 800 to 1,400 yards.

60. OCCUPYING POSITION.

a. GENERAL. The battalion commander occupies the battalion area as soon as possible after its designation by higher headquarters, in order to afford the maximum time for the construction of defensive works. When the information on the area is received, the battalion commander—

(1) With some members of his staff, makes a personal reconnaissance of the area, and arranges for unit commanders to meet him at a convenient point in the area.

(2) Arranges for the movement of the battalion to the defensive position without delay.

b. RECONNAISSANCE. The reconnaissance of the battalion commander is as detailed as possible. During the reconnaissance he determines—

(1) The limits of the battalion area.

(2) The most likely avenues of approach for hostile forces.

(3) Localities to be occupied by security forces to screen the position from hostile ground observation.

(4) Natural obstacles to be converted into defensive aids.

(5) Demolitions to be executed.

(6) Obstacles, including mine fields, to be built.

(7) Trace of the main line of resistance.

(8) Key points within the area, the retention of which is vital to the defense.

(9) Boundary and limiting points between companies.

(10) General location of supporting weapons.

(11) Details of defensive fires and concentrations to be requested of supporting artillery.

(12) Location of observation posts, aid station, ammunition distributing point, command post, and alternate command post.

(13) Locations to be occupied by the battalion reserve.

(14) Counterattack plans.

(15) Location of vehicles. These are held in concealed positions.

c. SELECTION OF MAIN LINE OF RESISTANCE. (1)

The main line of resistance is located to protect vital terrain; it may be located on either a *forward* or *reverse* slope. It is traced to provide as many as practicable of the following advantages:

(a) Retention of essential observation to the front and flanks, particularly for artillery.

(b) Concealment of defensive works from air and ground observation.

(c) Denial of close hostile observation into the position.

(d) Good fields for grazing and flanking fire of automatic weapons.

(e) Best possible use of natural obstacles, particularly antitank obstacles.

(f) Terrain that facilitates counterattack.

(2) The trace of the main line of resistance will be irregular and contain minor salients and reentrants to facilitate the development of flanking fire. The formation of large salients and reentrants is avoided. The defense areas on the main line of resistance must be mutually supporting, and capable of all-around defense.

(3) A battle position with its main line of resistance on a *forward slope* offers certain inherent advantages. From such a position the benefit of observation from the *forward slope* is obtained; and control of the key points affording observation for artillery, supporting weapons, and commanders is retained. A main line of resistance on the forward slope usually possesses the

most effective fields of fire for flat-trajectory weapons and positions from which to observe, to cover by fire, and so to maintain the integrity of the natural and artificial obstacles in front of the position. By extension of the rear limits of the company defense areas on the main line of resistance to the reverse slope, concealed and defiladed routes of communication which facilitate movement of troops and supplies and the efficient use of control agencies are obtained.

(4) (a) The main line of resistance is located on the *reverse slope* when the lack of cover and concealment permits enemy observed fire, particularly from direct fire weapons, to make the forward slope untenable; when better fields of fire for flat-trajectory weapons are available; or when necessary to avoid dangerous salients and reentrants. Initially, the forward slope may be used for observation, but in selecting a reverse slope position, the battalion commander must insure that essential observation from locations other than the forward slope are available. The reverse slope may be selected when control of the forward slope has been lost or has not yet been gained, or when the forward slope is otherwise unsuitable for defense. Fire plans should provide for maximum concentration of artillery and mortar fires on the forward slope and crest. The main line of resistance should be covered by supporting fires from positions next in rear as well as from the flanks. Reverse slope positions are strengthened by automatic weapons located on or just forward of the topographical crest so that effective fire can be brought to bear on attacking troops during their approach. The weapons so located should have enough overhead protection to insure their safety during a heavy volume of artillery fire. Antipersonnel mines and wire may be employed effectively on the forward slope.

(b) In general, the combat strength of a reverse slope defense results from fewer casualties suffered from

enemy fire, losses inflicted on the enemy during his approach to the position, and immediate counterattack by relatively fresh troops before the enemy has had time to establish himself.

d. DISTRIBUTION. The distribution of rifle companies generally is two on the main line of resistance and one in the reserve. Support weapon elements are placed where they can best achieve their mission, each element under control of the organization commander, if possible.

61. ORGANIZATION OF GROUND.

The plan for organization of the ground should prepare the battalion for combat at the earliest possible moment. In organizing the ground, the battalion commander—

a. Allots tools, material, and engineer troops, if attached, in accordance with the amount and emergency of the work to be done by subordinate organizations.

b. Supervises and coordinates the work, to insure that the terrain is used to the best advantage.

c. Inspects camouflage and concealment, including individual protective measures.

d. Issues orders for the construction of obstacles.

e. Issues orders on construction of dummy works.

f. Makes plans for the use of mines, booby traps, and other antitank and antipersonnel installations along all approaches in accordance with plans of higher headquarters.

62. FIRE PLAN.

a. DISTRIBUTION. In the organization of the ground, the battalion commander keeps in mind that the elements are distributed so that their fire will—

(1) Take the enemy under fire when he enters the zone of surveillance of the combat outpost.

(2) Hold the enemy under an increasingly heavy volume of fire as he approaches the battle position.

(3) Stop the enemy assault by a dense band of closely coordinated fires immediately in front of the battle position.

(4) Limit penetration of the position by prepared interior fires.

(5) Eject the enemy from the position by a combination of prearranged fires and counterattack should he succeed in a penetration.

b. The fire plan provides for—

(1) Opening of fires.

(2) Rates of fire.

(3) Mutual support of adjacent units.

(4) Fires to be delivered under conditions of reduced visibility.

(5) Signals for close defensive fires.

(6) Employment of armament dismounted from vehicles.

c. SUPPORTING FIRES. The fire plan includes the supporting of the combat outpost by mortar and assault gun fire, with observers at the combat outpost or other observation posts. The withdrawal of the outpost is covered by supporting fires.

d. MAIN LINE OF RESISTANCE FIRES. Fires from the main line of resistance usually are withheld until the enemy has approached within 500 yards of the position. Effort is made to conceal the location of the main line of resistance until fire is opened with surprise effect.

e. CLOSE FIRES. Plans are made to provide for the release of close defensive fires in front of any threatened locality. Each front line company is authorized to call for barrage fire.

63. ORDERS.

Orders given by the battalion commander to subordinates include—

a. Information of the enemy and friendly troops. Information of friendly troops includes mission, flank units, covering forces, supporting artillery, supporting tanks, and antitank weapons.

b. General plan of defense, battalion boundaries, general trace of the main line of resistance, and distribution of elements of the battalion.

c. Missions of rifle companies and attached and organic supporting units.

d. Location, strength and mission of reserves.

e. Organization of the ground, including priorities.

f. Composition, location, and mission of the combat outpost.

g. Location of the battalion ammunition distributing point, battalion aid station, disposition of battalion combat trains and company vehicles.

h. Location of battalion command post, observation post, and alternate command and observation posts and means of signal communication.

64. SECURITY.

a. **LOCAL SECURITY.** Local security is the responsibility of each unit. (For details on security see chapter 5.)

b. **COMBAT OUTPOST.** The battalion establishes a combat outpost when the general outpost is at considerable distance from the main line of resistance or when the battle is interrupted at nightfall. (For details on a combat outpost see FM 100-5.)

c. **ADJACENT SUPPORT.** Adjacent organizations provide mutual support and security by liaison, plan of fires, and observation. The battalion commander takes steps necessary to provide for the mutual support with adjacent troops, coordinating fire plans, and providing assistance in the event of a penetration.

65. CONDUCT OF DEFENSE.

a. GENERAL. The success of the defense depends upon the holding of its assigned area by each element, down to and including the rifle squad. The battalion commander insures that all avenues of hostile approach are covered.

b. CONDUCT OF FIRE. The integrity of the defense area is maintained by a combination of fire, hand-to-hand combat, and counterattack. Fires are released according to the battalion fire plan. The attacker is held under an increasing volume of fire as he approaches the position. When he closes with the position, automatic weapons are switched to their final protective lines, close defensive artillery and mortar fire is laid down, and the hostile assault is met by rifle fire, fire of supporting weapons, grenades, and hand-to-hand combat.

c. COUNTERATTACKS. (1) Should the enemy succeed in penetrating the battalion defense area, the battalion first seeks through fire to cause his immediate destruction or withdrawal. If fire alone is not successful, decision must be made whether to counterattack, to have the reserve hold its prepared position to block the penetration, or use a combination of these actions. The mission of the counterattack is to reestablish the main line of resistance. It is usually directed against the shoulder of the enemy penetration. (See fig. 25.) Unless adequately supported by tanks, a counterattack is withheld so long as enemy armored elements dominate the area in which the counterattack is to be made.

(2) The battalion reserve does not counterattack against an objective outside the battalion defense area except on order of higher headquarters. However, the route to the location from which the counterattack is to be made may cross into an adjacent battalion area if such movement has been coordinated with the com-

mander of the area. When the enemy is ejected from the battalion defense area, he is not pursued beyond close supporting distance of the main line of resistance, but is engaged thereafter by fire alone. The counter-attack is supported by all available supporting weapons. Use of tanks is covered in FM 17-36. The battalion order lists the possible penetrations against which counterattacks are to be planned, and states the priority in which plans will be prepared. The reserve company commander prepares details of the plans and submits them to the battalion commander for approval and for coordination of fires.

(3) When the reserve counterattacks, a new reserve is constituted from whatever troops are available. The combat command is notified immediately when the decision to commit the reserve has been made.

(4) Penetrations in adjacent areas are opposed by committing all or part of the reserve to the threatened flank to prevent widening of the penetration and the envelopment of the battalion flank.

d. INFILTRATIONS. Infiltration is guarded against by the posting of observers within each subordinate defense area to keep the ground between defense areas under constant surveillance. Areas that cannot be observed are searched by patrols.

66. RESERVE BATTALION.

a. MISSIONS. The armored infantry battalion in reserve usually is employed initially, in whole or in part, on security missions, to assist the front-line battalions in the organizations of their defense areas or in construction tasks. Upon completion of the initial tasks, the reserve battalion is used to deepen the defense, block penetrations from the flanks, and provide all-around defense.

b. SUPPORTING WEAPONS. Supporting weapons of the battalion often are assigned missions of assisting

front-line battalions by overhead fire. These weapons, protected by small rifle detachments, usually are located in the rear areas of the front-line battalions.

c. AREA. The area of the battalion in reserve is set up for all-around defense, plans being coordinated with adjacent reserve organizations.

d. COUNTERATTACK. (1) Counterattack plans generally are given by higher headquarters. The battalion commander coordinates with supporting units. Counterattack plans include—

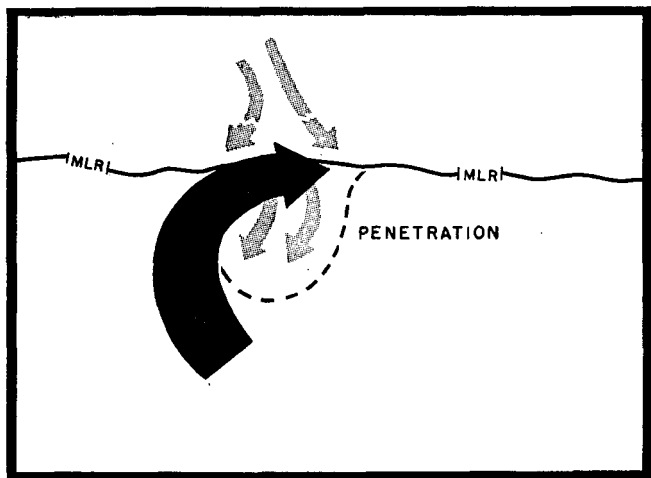


Figure 25. Counterattack swiftly, hitting the shoulder of the penetration.

- (a) Route to the line of departure.
- (b) Line of departure.
- (c) Formations.
- (d) Direction.
- (e) Objective.
- (f) Coordination with tanks.

(g) Initial missions of support weapons, together with time or signal to lift fires, and subsequent fire missions.

(2) Generally the counterattack is not directed against an objective outside the combat command area. If the route to the location from which the counterattack is to be made crosses into the sector of an adjacent unit, the movement is coordinated with that unit.

(3) Each counterattack is planned to make full use of all available fire power to regain a lost portion of the main line of resistance. It is generally directed against the shoulder of the penetration and little or no reserve is held out.

67. WITHDRAWALS.

a. **DAYLIGHT WITHDRAWAL.** A front-line battalion executes a daylight withdrawal by withdrawing each echelon under the protection of the next organization to its rear. Front-line companies withdraw under protection of the reserve company and the reserve company withdraws under the protection of the reserve battalion, or its covering force. (See fig. 26.) If the combat command or higher command has a reserve farther to the rear, the reserve battalion is withdrawn under the latter's protection. If not, the reserve fights a delaying action. Holding forces are left in place in each instance, withdrawing when the following wave takes up the defense. When tanks are available they may make a limited objective attack to disorganize the enemy and thus assist infantry in withdrawal. If terrain is unsuitable for a tank attack, they may assist withdrawal by fire. (See FM 17-36.)

b. **NIGHT WITHDRAWAL.** A front-line battalion executes a night withdrawal by the simultaneous withdrawal of all elements of the battalion, less the covering detachments. Secrecy is essential in the night

withdrawal and plans are made to have the withdrawing troops out of range of light artillery before daybreak. Orders are issued in ample time to allow subordinate leaders to complete plans during daylight and an assembly area is designated. The covering detachment consists of about one-third of the troops, including supporting weapons.

c. The covering detachment withdraws at a specified time, joining troops previously withdrawn or taking up a position of outpost, covering the rear position, by daylight.

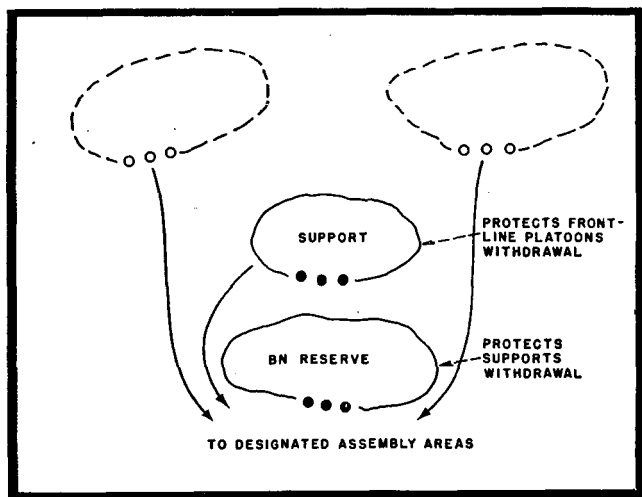


Figure 26. Daylight withdrawal.

68. DELAYING ACTION.

a. PURPOSE. The purpose of delaying action is to gain time while avoiding decisive action. The delay is accomplished by offensive action, by defensive action in one position, by defensive action in successive positions, or a combination of these methods.

(1) When operating as a part of a larger force, the battalion is assigned a sector on the initial delaying position and a zone or route of withdrawal.

(2) Whenever practicable, the line of resistance is located near a topographical crest to facilitate long range fire and provide immediate defilade for withdrawal to the next delaying position.

b. Tanks can be used to aid the infantry in delaying action by direct fire from hull defilade, by indirect fire in assisting the artillery, by a quick direct thrust into the advancing enemy, or by a surprise flank attack across the routes by which such a force is advancing. Such attacks must be strongly supported by the artillery and by the battalion supporting weapons. (See FM 17-32 and 17-36.)

c. CONDUCT OF FIRE. All supporting weapons are placed well forward initially, in order to take the enemy under fire as early as possible. Fire is opened at long ranges and the withdrawal is started prior to the beginning of the assault by the enemy. The supporting weapons are withdrawn in ample time to insure their safety, riflemen covering their withdrawal. The enemy is harassed by all possible fire. Complete withdrawal is coordinated with adjacent units, either by signal or by withdrawing at a specified time.

d. RESERVE. The battalion reserve constitutes the covering detachment and is placed in position to facilitate its employment for flank protection and to assist in extricating forward units. When the battalion withdrawal is successfully under way, the reserve becomes the rear guard.

e. ONE POSITION. The proximity of the enemy may require delay in one position for a predetermined length of time. The line of resistance is selected, the position is organized, and the action is conducted as in defense.

69. RELIEF.

a. Where a stabilized situation develops or defense continues for a prolonged period, the necessity for conservation of the fighting power of the troops requires provisions for the relief of battalions in the line.

b. Preliminary arrangements for the relief include a detailed reconnaissance of the sector by officers of the relieving unit. The relieving officers familiarize themselves with the dispositions and defensive arrangements of the outgoing units and the known hostile dispositions. Arrangements are made for the transfer of supplies and special equipment to be left by the relieved unit.

c. The relief is carried out under cover of darkness to preserve secrecy, and guides from the outgoing battalion meet each element down to and including the platoon, of the incoming battalion and conduct it to its position.

d. The commander of the outgoing battalion is responsible for the defense of the sector until the relief is completed.

e. Units being relieved remain in position until the relieving unit moves in and takes over.

70. REFERENCE.

For a more complete discussion of defensive operations and retrograde movements, see FM 7-20.

CHAPTER 8

SPECIAL OPERATIONS

71. AMPHIBIOUS OPERATIONS.

a. GENERAL. The armored infantry battalion normally is employed with other armored units in landings on a hostile shore. The armored division usually lands as a unit on beaches or in ports which have been secured by preceding assault infantry. However, exceptionally it may be used as assault troops for amphibious landings.

b. ROLE. The battalion may be assigned one of the following tasks in an amphibious operation:

(1) *To establish a beachhead.* The battalion is used to establish a beachhead only in an emergency. When used in this manner, it operates as an assault force landing without vehicles. The vehicles are brought in later, upon orders from higher headquarters.

(2) *To expand a beachhead.* When employed in this manner, the battalion normally is employed with other armored units. The vehicles accompany the troops, in order to retain the mobility and firepower of the battalion. The mission of the battalion is to assist other armored units in pushing the enemy inland in order to secure a better foothold.

(3) *To drive inland, separately or as a part of a task force, to seize a strategic installation or tactically important terrain feature.* When used in this manner, the battalion is landed with vehicles. Missions include the capture of definite objectives, such as airports, communication centers, bridges, prominent terrain features, and towns or villages.

c. **LANDING CRAFT.** Types of landing craft used by the battalion are given in orders from higher headquarters. Types used are governed by—

Proposed employment of the battalion.

Availability of landing craft.

Character of the landing beach.

(1) Landing craft normally used by troops without vehicles include landing craft, infantry (LCI); landing craft, personnel (ramp) (LCP(R)); landing craft, vehicle personnel (LCVP); and landing, vehicle track (LVT).

(2) Landing craft used to transport vehicles normally are large vessels, such as landing craft, tank (LCT); landing ship, tank (LST); combat loaded transport for a landing team (APA), and cargo, transport (AKA).

d. **PRIOR TO EMBARKATION.** Special duties of the battalion commander prior to embarkation include—

(1) *Training.* Special training for the amphibious operation is directed towards placing men and matériel on the hostile shore completely organized and equipped, and with the fewest possible casualties. Unit commanders are oriented in the type of landing, and detailed drills and rehearsals of each phase are conducted. This training is conducted in a realistic manner and under conditions similar to the actual contemplated landing. Teamwork is stressed and each individual is given a definite task. In addition to this special training, officers and men are physically hardened by planned conditioning exercises.

(2) *Waterproofing of vehicles.* All vehicles to be landed from ship to beach are completely waterproofed prior to embarkation. Waterproofing kits for each type vehicle, with instructions for application, are issued. Ordnance personnel generally is available for the supervision of final phases of this work.

(3) *Loading of ships.* Ships are loaded so that the loss of any one vessel does not result in the loss of any complete combat element of the battalion. An attempt is made to load each ship with a small task team capable of independent action. The mortar, assault gun, machine gun, and antitank gun platoons are distributed on the various ships. Plans are made for immediate reorganization upon landing.

e. ABOARD SHIP. Tasks aboard ship depend upon the number of vessels used by the battalion, available space on each ship, and the nearness of possible enemy observation, aircraft, ships, and submarines. Orders on limitations of activities are given by higher headquarters. Duties aboard ship include—

(1) *Maintenance.* Weapons and personal equipment are checked carefully and are kept in the best practicable condition. Vehicles are checked and maintenance is continuous.

(2) *Instructing.* Details of the operation, previously withheld for security, are released to individuals. Maps, photographs, sand tables, and all available training aids are used to orient each individual in his task, the mission of his unit, and contemplated action of adjacent units. Instruction is given, if time permits, in—

(a) Interrogation of prisoners.

(b) Recognition of hostile aircraft and armored vehicles.

(c) Treatment of civilian personnel.

(d) Native customs and habits.

(e) Types of vegetation, diseases, and harmful reptiles and insects.

(3) *Physical training.* Physical training and conditioning must be continued, within limits of the space available for training.

f. DEBARKATION. (1) Upon reaching a destination, ships are unloaded according to schedule. Personnel and vehicles are moved to prearranged assem-

bly areas. A battalion assembly area is designated for the dewaterproofing of vehicles and reorganization of tactical units. This is done under the supervision of the service company commander or the battalion motor officer. After the dewaterproofing in the battalion assembly area, the vehicles are dispatched to their respective organizations by tactical units under the supervision of the company motor officer. Guides are used to lead the vehicles to their units.

(2) When crews are separated from their vehicles the battalion commander establishes a driver's pool on the beach to move driverless vehicles to the battalion assembly area.

(3) The battalion moves forward aggressively to carry out its assigned mission after landing and reorganization has been effected.

72. ATTACK OF RIVER LINE (FM 100-5).

a. MISSION. An armored infantry battalion is used in a river crossing in conjunction with other forces or it may be used alone. The missions assigned to the battalion may be—

(1) To assist in establishing a bridgehead.

(2) To expand a bridgehead.

(3) To seize a strategic installation or tactically important terrain feature.

b. ATTACK ORDERS. Attack orders from higher headquarters usually include the following:

(1) Information of the enemy and terrain within the crossing area.

(2) Mission, hour of crossing, zone of action, and objectives.

(3) Plan for employment of supporting troops.

(4) Available engineer equipment and guides.

(5) Communication.

c. OBJECTIVES. The objective of the first assaulting troops usually is a terrain feature the capture of

which prevents hostile direct small-arms fire on the crossing points. Upon gaining this objective the attack is conducted in the normal manner.

d. PLANS. Plans for the crossing include—

(1) Coordination with supporting and adjacent units.

(2) Width and formation of crossing, with allotment of assault boats and other means of crossing to organizations.

(3) Missions, firing position areas, targets, and principal directions of fire for supporting weapons on friendly side, their time of crossing, and missions on the hostile shore after crossing.

e. BATTALION ORDER. The battalion commander, after a personnel reconnaissance, gives as much of the following information as possible in his order:

(1) Composition and distribution of hostile forces.

(2) Terrain feature suitable for company objectives.

(3) Subordinate unit assembly areas on the hostile bank.

(4) Road nets, type of terrain, and other features of the hostile bank.

(5) Position areas of supporting weapons.

(6) Width, depth, and current of river, and type and condition of river banks.

(7) Final assembly areas on friendly side of river and routes to same.

(8) Communication.

73. DEFENSE OF A RIVER LINE.

a. CLOSE FIRES. When the river is an effective barrier and terrain is suitable for the development of close fires the main line of resistance is placed on the near bank of the river, and the defense is organized as in any other comparable terrain.

b. WOODED TERRAIN. Wooded terrain along the banks of the river is utilized to conceal automatic

weapons and riflemen, with bands of fire placed along the river front. If the woods are back from the river yet within range of the river, the main line of resistance is moved back to the woods, with combat outposts along the river banks.

c. DISPOSITIONS. The battalion frontage normally is divided between two rifle companies, each of which covers its front with a series of outguards and holds the bulk of its troops in a mobile concealed assembly area. The reserve company also is held mobile. Supporting weapons are distributed in the normal manner conforming to the terrain.

d. PATROLS. Patrols, with radio communication, operate at all times on the enemy side of the river, sending back all available information on the hostile forces and their direction of attack.

74. ATTACK IN WOODS:

a. ADVANCES. Advances in woods usually are on foot, unless trails along the axis of advance are available and have been cleared of the enemy. The battalion is advanced with two companies abreast and one in reserve or in column of companies, according to the width of the battalion front.

b. FORMATIONS Formations generally are squads column until resistance is met, then the squads deploy. Patrols are used for liaison and reconnaissance of areas between elements. Patrols are sent a short distance ahead of the main body of troops in order to guard against surprise. All men constantly keep on the alert for enemy snipers.

c. ORIENTATION. Maps of large wooded areas often are inaccurate, failing to show ridge lines, ravines, and other terrain features. Visibility is limited and it is necessary that advancing units be halted frequently to determine their exact location. This information is sent back to supporting artillery and higher headquarters, in order that supporting fires

from the rear will be delivered in the proper place when needed.

d. COMMUNICATION. Communication between units often is difficult. Liaison and the use of field telephones will guard against loss of control if radios fail.

e. SUPPORTING WEAPONS. Supporting weapons often are attached to organizations, due to lack of control. If kept under battalion control, the supporting weapons are held mobile, ready for instant dispatching to an organization upon call.

f. SUPPLY. In the forward areas all supplies, ammunition, rations, and weapons are carried by the combat companies. Supplies are reduced to the minimum as they are carried by the individual soldier. Supply lines to the rear must be patrolled, either by the battalion supply section or higher headquarters.

g. HALTS AT NIGHT. Halts are made early enough in the afternoon to allow the erection of defensive positions to stop enemy counterattacks under cover of darkness. These halts are made on ridges or other dominating terrain features, and an all-around defense is set up. All men dig foxholes and time permitting, obstacles, such as booby traps and mined approaches, are constructed.

75. DEFENSE IN WOODS.

a. CHARACTERISTICS. Defense in woods is characterized by short fields of fire, and lack of control, observation, and communication. These weaknesses are overcome by—

(1) Strong line of defense by riflemen and supporting weapons squads.

(2) Closely coordinated fires.

(3) Constant patrolling and extensive use of local security groups.

(4) Preparation for rapid shifting of reserves.

(5) Reduction of distance between units.

b. ORGANIZATION AND DEFENSE OF POSITION. In organizing a position to be held the following salient points are considered:

- (1) Commanding ground is selected when possible.
- (2) A perimeter of defense is set up.
- (3) Sentries are posted on the perimeter, with patrols working in between.

(4) Plans are made for mines, booby traps, and other antipersonnel and antimechanized installations, in accordance with plans of higher headquarters.

(5) Emplacements are dug for crew served weapons and fox holes for individuals.

(6) Range cards are prepared and artillery is registered.

(7) Machine guns and automatic weapons are sited down trails and other open areas.

e. SUPPORTING WEAPONS. (1) *Machine guns.* Due to the limited fields of fire, there is little or no opportunity for long-range machine-gun fire. Machine guns not placed in the main line of resistance are initially sited well forward to limit penetrations, and fire lanes are cleared.

(2) *Mortars.* The 81-mm mortars are placed in openings in the woods, or openings are cut. Every possible means for registering the weapon is taken.

(3) *Assault guns.* Assault guns usually are held in mobile reserve, ready at all times to move forward and fire through openings or prepared lanes.

(4) *Antitank guns.* The antitank guns are used to cover roads, trails, or other likely avenues of approach for vehicles.

76. COMBAT IN TOWNS. See FM 31-50.

77. DEFENSE OF A TOWN OR VILLAGE. See FM 31-50.

CHAPTER 9

HEADQUARTERS AND HEADQUARTERS COMPANY

Section I. GENERAL

78. GENERAL.

The headquarters and headquarters company of an armored infantry battalion consists of a battalion headquarters and the battalion headquarters company. The battalion headquarters consists of the battalion commander and his staff. The headquarters company consists of a company headquarters, a reconnaissance platoon, an assault-gun platoon, a mortar platoon and a heavy machine-gun platoon.

79. BATTALION HEADQUARTERS.

The battalion headquarters is composed of the battalion commander, executive officer, S-1, S-2, S-3, S-4, communications officer, liaison officer, and necessary enlisted personnel for the functioning of the tactical elements of battalion headquarters. For duties of the staff officers see FM 101-5.

80. COMPANY HEADQUARTERS.

a. The company headquarters is composed of the headquarters section, company maintenance section, and administrative, mess, and supply section. The function of the company headquarters section is administrative.

b. The headquarters company commander is responsible for the administration, security, individual

and tactical training of headquarters and headquarters company. Technicians receive their technical training under appropriate staff officers. In combat the headquarters company commander controls the actions of the machine gun, mortar, and assault gun platoons when they operate directly under battalion control. He makes recommendations to the battalion commander for the employment of these platoons. He remains in close contact with the battalion commander either in person, by radio, telephone, or messenger. Normally he establishes his headquarters adjacent to the battalion command post. When the headquarters company commander is absent from the command post his duties as headquarters commandant are assumed by a staff officer.

Section II. RECONNAISSANCE PLATOON

81. MISSIONS.

a. The principal mission of the reconnaissance platoon is to obtain information required by higher headquarters and get it to the interested party in time to be of use. The platoon avoids engagements with the enemy, but must be prepared to act aggressively if the need arises.

b. The platoon normally performs the following types of reconnaissance:

(1) *Zone reconnaissance.* This type is performed in front of an advancing force. Aggressive force is used by the platoon when needed.

(2) *Area reconnaissance.* This type of reconnaissance is designed to search an area for definite information. This reconnaissance is more detailed than the zone reconnaissance.

c. The platoon is prepared to perform reconnaissance either over roads and trails or cross-country. Dismounted scouts are used when necessary.

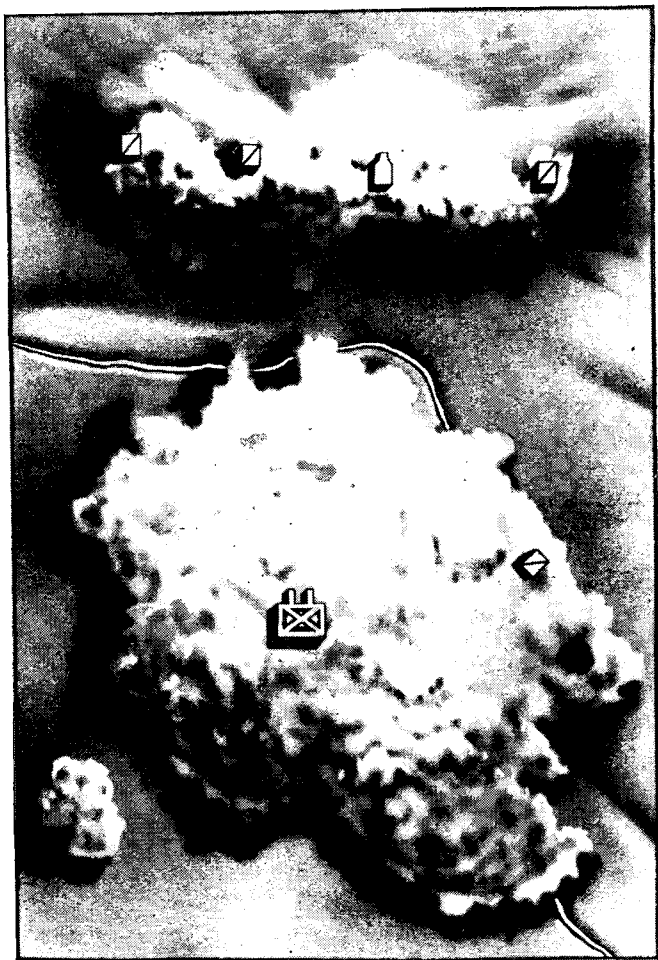


Figure 27. The reconnaissance platoon is used to observe to the front or flanks when the battalion is in the final assembly area or attack position.

d. The employment and training of the reconnaissance platoon receives close supervision of the battalion commander. The platoon leader is responsible for the performance of its assigned battalion missions. He keeps in contact with the battalion commander and S-2 at all times during action in order to keep battalion headquarters advised on the situation and to perform any missions without delay. Information of vital importance concerning terrain, action of the enemy, strength of the enemy, action of adjacent friendly troops, or any other vital information is sent to battalion headquarters immediately.

e. The platoon may be reinforced by organic or attached units when the need arises.

82. MARCHES, BIVOUAC.

a. When the battalion is marching, the reconnaissance platoon is used in front of the battalion, reconnoitering the march route.

b. All avenues of approach to the line of march—roads or trails—are reconnoitered by the platoon prior to the arrival of the main body of the marching unit.

c. Members of the reconnaissance platoon are used for road guides. When the demand exceeds the number of guides available, additional ones are secured from rifle companies. They are under the control of the reconnaissance platoon leader.

d. When moving cross-country, the reconnaissance platoon covers a front 1 to 2 miles on each side of the battalion axis of advance.

e. Speed of reconnaissance is based on mission of the battalion, width of front, time required for information, rate of advance of main body, nature of terrain being traversed, and composition and strength of the enemy.

f. The bivouac area is thoroughly reconnoitered prior to the arrival of the battalion. Guides are posted



Figure 28. Dismounted reconnaissance is conducted before moving vehicles over hills or around curves.

and the battalion is led into the covered area as quickly as possible. Adjacent areas are investigated immediately, with special emphasis on nearby covered areas and likely approaches for hostile mechanized forces.

g. During the march, timely reports on the route, condition of the roads or terrain, strength of bridges and presence of enemy are sent to the battalion commander.

83. OFFENSIVE.

a. Prior to contact in the offensive the reconnaissance platoon is sent out for a detailed reconnaissance of the zone of advance. Information is sought on—

- (1) Size and composition of hostile forces.
- (2) Disposition and movement of enemy.
- (3) Location of enemy's flanks.
- (4) Depth of disposition.
- (5) Critical points or areas likely to be held by the enemy.
- (6) Areas likely to be swept by hostile flat trajectory fire.
- (7) The location, extent, and type of obstacles, natural and constructed.
- (8) Location, nature, and extent of favorable avenues of approach to the hostile position.
- (9) The location of any friendly units through which the battalion is to pass.
- (10) Location of likely avenues for hostile mechanized attack.

b. When the main body of the battalion is committed to action, the reconnaissance platoon establishes observation posts, performs continuous battle reconnaissance under direction of the battalion commander, maintains liaison between adjacent units, or supplements flanks security organizations.

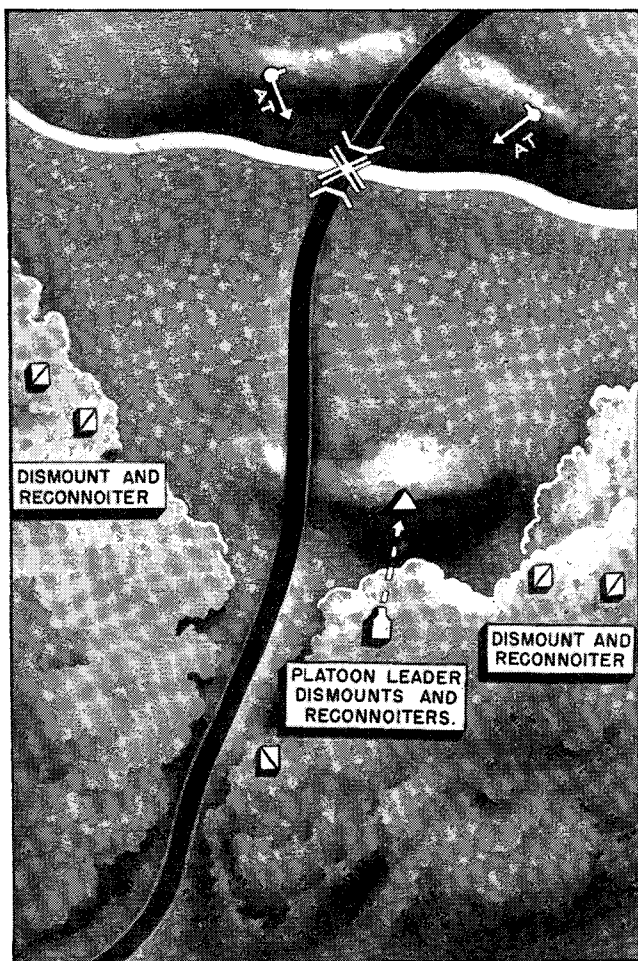


Figure 29. When enemy opposition is encountered the reconnaissance platoon seeks the strength and flanks of the defensive position.

84. DEFENSIVE.

The reconnaissance of the area to be defended is as detailed as time and conditions permit. The reconnaissance includes—

a. Locations for installations, weapons, and mine fields.

b. Likely avenues of approach for hostile dismounted and mechanized forces.

c. Localities to be occupied by security forces in order to screen the position from close hostile observation.

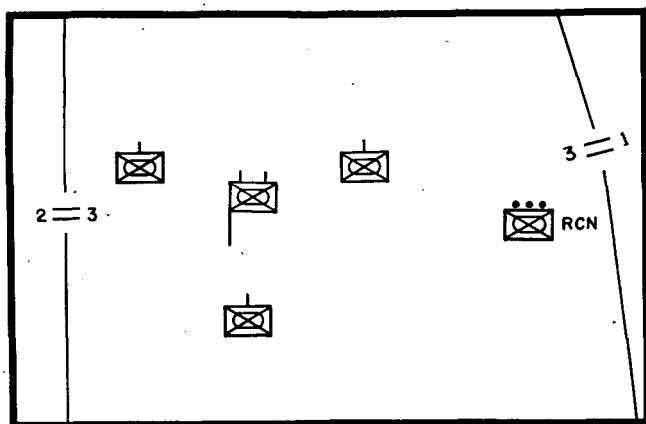


Figure 30. During combat the reconnaissance platoon may be used to maintain liaison with a flank unit.

d. Natural obstacles in the foreground or terrain features that can be converted readily into obstacles.

e. Demolitions to be executed.

f. Locations to be organized by the battalion reserve.

g. Suitable locations for observation posts, aid stations, command post, and alternate command post.

85. BATTLE MISSIONS.

When the enemy attacks, the reconnaissance platoon may be used for—

a. RECONNAISSANCE. To gain information of attacking force.

b. COUNTERRECONNAISSANCE. To prevent hostile ground reconnaissance from locating, identifying, and reporting friendly movements.

c. DEFENSE. To hold an area or position until relieved by higher authority.

d. DELAYING ACTION. To delay and force hostile advancing elements to deploy, thus slowing down their rate of advance.

e. FLANK SECURITY. To conduct reconnaissance to the flanks and rear of a unit operating on an independent mission to furnish warning of any enemy.

Section III. ASSAULT GUN PLATOON

86. GENERAL.

a. The assault-gun platoon furnishes close support fire for the battalion, using either direct or indirect fire. The platoon is usually employed as a complete platoon under the direction of the battalion commander.

b. The platoon is composed of a platoon headquarters section, three gun sections, and an ammunition section.

87. CONTROL AND COMMUNICATION.

a. Successful employment of the platoon depends upon its control by the battalion commander and platoon leader. The headquarters and gun section are equipped with radios, facilitating control.

b. Communication between the battalion commander and the platoon leader is by radio, wire, and

messenger. Instant communication is necessary for the successful employment of the platoon. Communication between the platoon leader and gun sections is by radio, wire, messenger, and visual signals.

88. EMPLOYMENT.

For employment and other details see FM 17-25.

Section IV. 81-MM MORTAR PLATOON

89. GENERAL.

a. The 81-mm mortar platoon is used to support the rifle companies of the battalion under the direction of the battalion commander. Due to the high trajectory of the mortar, the platoon is useful in reducing point targets and neutralizing limited area targets inaccessible to the flat trajectory weapons.

b. The platoon is composed of a platoon headquarters section and three mortar squads.

90. CONTROL AND COMMUNICATION.

a. Control of the platoon and the prompt carrying out of its missions are responsibilities of the platoon leader.

b. The battalion commander assigns the platoon areas to be covered or targets to be engaged in his battalion order. Missions may be progressive as the situation develops or changed to meet the situation by fragmentary orders.

c. Communication between the battalion headquarters and the platoon is by radio, wire, and messengers. Intraplatoon communication is by radio, visual signals, wire, and messengers.

91. EMPLOYMENT.

For employment and other details of the platoon see FM 17-27.

Section V. MACHINE GUN PLATOON

92. GENERAL.

a. The machine gun platoon is employed by the battalion commander to give the rifle companies additional fire power. The platoon may be used to cover a definite sector.

b. COMPOSITION. The platoon is composed of a platoon headquarters section and two gun sections of two squads each. Each squad is equipped with a caliber .30 machine gun as the basic weapon. Each section is transported by a carrier, half-track.

c. All members of the platoon are trained in indirect firing. Indirect firing may be employed when appropriate.

93. CONTROL AND COMMUNICATION.

a. CONTROL. Control of the platoon and the carrying out of battalion orders are functions of the platoon leader, who supervises fire of the guns at all times when employed as battalion weapon. Squads or sections may be attached to other units, control then passing to the commander thereof.

b. COMMUNICATION. The platoon leader communicates with higher headquarters by radio or messenger. In order to successfully carry out the platoon mission, he keeps in constant touch with battalion headquarters. Communication within the platoon is by runner, visual signals, or orally.

94. ARMAMENT.

The platoon has four caliber .30 water-cooled machine guns for its primary weapons. Each member is armed with an individual weapon. Each section has a rocket launcher for antimechanized defense and a caliber .50 machine gun is located in the command half-track for anti-aircraft defense.

95. MISSIONS.

The primary missions of the machine gun platoon are—

- a. To provide close fire support for the rifle companies.
- b. To protect exposed flanks.
- c. To protect rear installations, command posts, and observation posts.
- d. To support by overhead fire.

96. FIRING POSITIONS.

a. The position areas of machine gun platoons—
(1) Provide gun positions from which fire can be placed on all assigned targets or any targets appearing in assigned sectors of fire.

(2) Provide observation from which fire and the advance or withdrawal of friendly troops can be observed.

(3) If possible, provide gun positions permitting overhead and flanking fire. If overhead fire is not possible, gaps between friendly troops are utilized.

b. GUN POSITIONS. Gun positions are chosen for—

(1) *Fields of fire.* Clear field of grazing fire is sought and full advantage is taken of cross and flanking fire.

(2) *Mutual support.* The guns are placed in width and depth. Each gun should be able to protect the front and flanks of adjacent guns.

c. EMBLEMMENTS. Emplacements are dug to conceal and protect the guns and their crews from enemy observation and fire.

97. FIELDS OF FIRE.

a. Fields of fire of the platoon cover the most likely avenues of enemy approach. The platoon leader in laying out the sectors of fire for each gun, coordinates with company commanders of supported rifle com-



Figure 31. Machine gun field of fire before clearing.



Figure 32. Do not overclear, revealing position.



Figure 33. Leave vegetation not hampering fire to aid in camouflage

panies, securing from them the disposition of friendly troops. The field of fire for each gun overlaps those of adjacent troops. All dead spaces are reported to the battalion commander in order that they can be covered by other weapons.

b. If time permits, the area in front or to the flanks of each gun is cleared to afford an unobstructed field of fire. Care is taken not to disclose the position by overclearing.

98. FIRE CONTROL.

Fire control is the responsibility of the platoon leader. Control is achieved by communication, fire discipline, and observation during battle. Care is taken that ammunition is not wasted on invulnerable targets and targets already neutralized.

99. EMPLOYMENT IN ATTACK.

a. **PRELIMINARY PLANS.** Prior to the attack, while in the assembly area or during the approach march, the platoon leader makes a terrain reconnaissance. Plans are made for the best possible location of the guns for support of the rifle company or companies and details of the fire plan are given to all members of the platoon. Fire orders include—

(1) Pertinent information of the enemy and friendly troops.

(2) Mission of the platoon.

(3) Initial position area and fire mission of each section or separate gun.

(4) Location of alternate and supplementary position areas and the signals for occupying them.

(5) Security measures.

(6) Restrictions on the opening and conduct of fire and instructions concerning ammunition expenditures and supply are included.

(7) Location of aid station, observation posts, and additional supplies.

b. **FIRES DURING ATTACK.** The platoon is employed as a fire unit whenever possible, in order to gain surprise and to mass its fire. Primary targets, unless otherwise designated, are organized defense areas directly opposing the advance of attacking rifle organizations.

c. **FLANKING AND LONG RANGE FIRES.** Whenever the progress of the supported riflemen is greater than that of adjacent troops, the platoon generally is used to fire to the flank, assisting the retarded organizations and protecting its own organization from enemy flank fire. If friendly troops mask primary targets in their advance, targets in rear of the hostile forward positions are taken under fire.

100. DISPLACEMENT.

The normal method of advancing the platoon is by bounds by section. At times the platoon may be ordered to move forward as a unit, with friendly troops taking over missions of the platoon and covering its advance. Vehicles are used in displacing if possible.

101. ASSAULT.

During the assault, the platoon takes advantage of gaps between rifle organizations to deliver fire on enemy strong points. When the leading rifle units capture a position and halt to reorganize, the machine gun platoon is particularly alert for hostile counterattacks. The machine guns are displaced forward as soon as it is evident that the enemy position will be captured. Once on the position, the guns are emplaced promptly.

102. REORGANIZATION.

Complete reorganization of the platoon is postponed until the battalion objective is reached. Partial reorganization is carried out during lulls in fighting.

103. PURSUIT.

In the pursuit the platoon is prepared to go into action without delay. Targets are rear elements of the retreating enemy and roads or defiles through which the enemy must retire.

104. EMPLOYMENT IN DEFENSE.

In the front line battalion on defense, the machine gun platoon is employed to cover the main line of resistance.

105. FIRE ORDER. See FM 23-55.

106. FIRE PLANS.

a. Detailed fire plans are worked out by the platoon leader, to cover all probable approaches to the area. Alternate and supplementary positions are prepared, with range cards for each. Each gun is given a sector of fire and plans are made in accordance with the battalion fire plan. The platoon leader submits his plans to the company commander, showing disposition, sector of fire, and final protective line for each gun. All dead spaces to be covered by other weapons also are reported. Sectors of fire overlap and fire is coordinated with adjoining organizations for mutual support.

b. FINAL PROTECTIVE LINE. Each gun crew computes all necessary data on the final protective line as soon as possible, recording it on the fire data card. The rate of fire on the final protective line is controlled by the platoon leader.

107. LOCAL SECURITY.

Close-in rifle protection to prevent the rushing or outflanking of the machine gun is essential. Riflemen are used for local security. The guns are placed, if possible, for mutual protection. Ammunition bearers

not employed in maintaining the supply of ammunition are used for close protection.

108. FIRES DURING DEFENSE.

Machine guns in the main line of resistance hold their fire until the main hostile attack is launched. Scouts preceding the main attack are not fired upon by machine guns; riflemen take care of these targets. Generally fire is withheld until the enemy approaches within about 500 yards of the position. Gunners lay on final protective lines on order or signal and fire at the rate prescribed by the platoon leader.

109. DISPOSITION AT NIGHT.

The machine guns habitually are laid on their final protective lines at night or during smoke or heavy fog.

110. RESERVE BATTALION.

Machine gun platoons in reserve battalions initially may be assigned one of the following missions:

a. LONG-RANGE FIRE. The primary mission of these guns in defense is fire support delivered in front of the main line of resistance.

b. FLANK PROTECTION.

c. SUPPORT THE COUNTERATTACK.

111. RETROGRADE MOVEMENTS.

Delaying action. Machine gun platoons to be withdrawn with rifle companies usually are attached to those companies. Positions affording long-range fields of fire and covered routes of withdrawal are essential. The machine guns open fire at maximum effective range, withdrawing prior to close combat.

112. MARCHES.

In route marches the machine gun platoon marches near the head of the column in order to protect the

battalion from a surprise attack. Part of the platoon often is attached to a security force. Sections of the platoon may be attached to an advanced guard or flank guard to give the security forces added fire power. When attached, the section functions under the command of the unit to which attached.

113. BIVOUACS.

In bivouac the platoon or some of its elements may be attached to the supports of the bivouac outpost. If not used in this manner, the guns are sited on the outer perimeter of defense.

CHAPTER 10

SERVICE COMPANY

Section I. GENERAL

114. GENERAL.

a. The service company is the service and administrative company of the armored infantry battalion, performing the following general functions:

(1) Furnishes enlisted personnel for battalion administrative headquarters, including the personnel and administrative section.

(2) Receives and distributes all supplies and replacements.

(3) Performs second-echelon motor maintenance.

(4) Furnishes supply and transportation personnel.

b. In combat, the service company establishes, operates, and controls—

(1) Battalion distributing points for ammunition, rations, water, fuel and lubricants, and engineer and other supplies.

(2) The battalion trains bivouac, usually containing the battalion supply officer's section, company (bivouac) headquarters, transportation platoon, maintenance platoon, and kitchen trucks. Mess and supply personnel and kitchens of all companies remain in the trains bivouac when not required in the forward area.

115. COMPOSITION.

a. The service company consists of a company headquarters and administrative section, a battalion

administrative and personnel section, a battalion supply and transportation platoon, and a battalion maintenance platoon.

b. The service company commander is, in addition to his other duties, trains commander and assistant supply officer. He controls the trains in marches, sets up the trains bivouac area, and is responsible for furnishing necessary transportation for supplies.

c. The company headquarters section is composed of the company commander and enlisted men necessary for company administration, mess, supply, and maintenance.

d. The battalion administrative and personnel section is composed of the personnel officer and essential enlisted men. In combat, company clerks, who habitually work in the personnel section, are attached to the section. The section usually is attached to divisional administrative units, remaining in the rear echelon.

e. The supply and transportation platoon is composed of the platoon leader, truck and other vehicle drivers, and the necessary clerks for supply and transportation.

f. The maintenance section is composed of the battalion maintenance officer and mechanics and clerks necessary for battalion maintenance of vehicles.

116. MARCHES.

Normally, in marches, the trains of the battalion are divided into combat and field trains. This division is flexible, but for normal operations is considered as follows:

a. Combat trains (essential for the immediate mission).

(1) Fuel and lubricants.

(2) Ammunition.

(3) Company maintenance.

(4) Battalion maintenance.

(5) Medical.

b. Field trains (not essential for immediate mission).

(1) Unit personnel section.

(2) Kitchen, ration, and water trucks.

(3) Excess fuel and lubricants, and ammunition trucks.

117. BIVOUACS.

a. The service company commander is responsible for the administrative functioning and security of the service company and trains bivouac.

b. Immediately upon arrival in a bivouac area, whether with other troops or operating on a separate mission, the service company commander—

(1) Provides for local security.

(2) Orders all vehicles not in use concealed.

(3) Prepares overlay of area showing distribution of troops, sending this overlay to higher headquarters.

(4) Assists the S-4 by preparing administrative maps, showing location of all supply points and their hours of opening and closing, routes and alternate routes to supply points and location of administrative command posts of higher units.

(5) Coordinates and sets up battalion administrative, supply, transportation, and maintenance functions within the service company and trains bivouac area.

118. MOVEMENTS.

a. The service company moves forward during the attack along the axis of maintenance and evacuation as the situation permits in order to give adequate logistical support to the battalion.

b. Likewise, the company and its attached personnel move to the rear in retrograde movements, leaving the area and clearing roads in ample time to

prevent clogging routes over which combat elements are to pass. In retrograde movements, combat trains normally remain with the battalion, furnishing combat troops close support. Maintenance units are attached to companies for the purpose of recovering vehicles.

Section II. SUPPLY

119. SUPPLY.

a. GENERAL. The supply and transportation platoon has the task of obtaining supplies of all types for elements of the battalion and the transporting of these supplies to a predesignated point. The supply officer is responsible for the administrative details. He is assisted by the service company commander in obtaining and distributing the supplies.

b. TRANSPORTATION OFFICER. The transportation officer is responsible for the dispatching of the transportation platoon vehicles. He controls their use and supervises first-echelon maintenance of platoon vehicles. Administrative records within the platoon are his responsibility. When necessary or desirable, he accompanies the vehicles to rear distribution points. He makes break-downs of supplies and habitually conducts vehicles forward to the companies or predesignated points.

120. SUPPLIES.

a. GENERAL. Supplies are furnished to the companies as requisitioned or needed. The supply officer, both in garrison and in combat, anticipates the need for supplies, furnishing them to companies as needed.

b. WATER AND RATIONS. Water and rations (Class I) are expended at a normal daily rate. The ration break-down for companies is made by supply

personnel in the service company area. In combat the men are fed by one of the following methods:

(1) Kitchen trucks are kept with the companies, the men being given three hot meals daily when not in action. The rations are brought forward to the kitchens at night. This method of feeding will usually not be feasible for armored infantry in action.

(2) If impossible to take the kitchen trucks forward, they are held in the train bivouac area and front line troops use the emergency rations carried in the combat vehicles. The emergency rations are replenished as required. This method of feeding is commonly used by armored infantry in combat.

(3) Food may be sent forward at night to combat troops. When this method is used, a hot supper is prepared by the kitchen crews in the bivouac area. The kitchen trucks move forward at dusk, and the men are served a hot supper. Breakfast is prepared and served while the kitchen is forward, and a cold lunch is left with the men. The kitchen trucks return to the bivouac area before daybreak. If it is impossible to send the kitchen trucks forward, the food may be placed in containers and sent forward by $\frac{1}{4}$ -ton trucks or half-tracks.

c. FUEL, LUBRICANTS, AND AMMUNITION. The supply and transportation platoon normally carries about one-third refill of fuel and lubricants (sufficient for approximately 50 miles of operation on average roads) and one-half refill of large caliber ammunition and one-quarter refill of small arms ammunition. In a stable position ammunition may be dumped in the train bivouac area or with the combat companies, building up a reserve. When dumped, all vehicles are refilled and plans are formulated for the evacuation of this extra ammunition. If the situation requires, organic loads of kitchen and water trucks are dumped, and the vehicles are used to haul ammunition.

d. **CLASS II AND IV SUPPLIES.** Normally items of Class II and IV supply are obtained by requisition prepared by the company and submitted to the battalion S-4. Clothing and other items such as automotive parts may be obtained by exchange.

Section III. PERSONNEL

121. GENERAL.

a. **REFERENCES.** Personnel administration of the battalion follows the procedures prescribed by Army Regulations, War Department Circulars TM 12-250, Administration, and TM 12-255, Administrative Procedures.

b. **LOCATION OF PERSONNEL SECTION.** The battalion personnel section, including the company clerks, is normally attached to the division administrative echelon during periods of active combat and is under the direct supervision of the division adjutant general. During periods of reorganization or extended periods that the battalion is not employed, the personnel section reverts to the battalion.

c. **REPLACEMENTS.** Requisitions for replacements are submitted by the personnel officer based on information received from the S-1 or are submitted by the S-1 directly to the division G-1. During initial phases of an engagement, authorized battalion basics which are not needed or cannot be transported by their own company are transported, billeted, and messed by the service company. They are sent by service company commander to the combat companies as casualty replacements when called for by the S-1 or the combat company commanders. Replacements from rear echelons are sent to the companies during combat as follows:

(1) When *large* groups are needed they are brought by the personnel officer to the service company area.

The personnel officer will, if possible, interview the replacements at the administrative echelon and prepare rosters of the men indicating their MOS numbers. They are then assigned by the S-1 and personnel officer at the service company area and delivered to the companies.

(2) When *small* groups of replacements or small groups of hospital returnees are received they may be sent by the division adjutant general to the G-1 at the division forward command post where they will be delivered to the battalion S-1 for assignment or reassignment.

d. STRAGGLERS. Some stragglers will be picked up and returned to their companies by battalion personnel. Others will be picked up by military police at straggler points and delivered to battalion S-1 or battalion service company commander who will arrange for their immediate return to their companies.

Section IV. MAINTENANCE

122. GENERAL.

a. REFERENCES. Vehicular maintenance within the battalion is conducted in accordance with AR 850-15, Motor Vehicles; TM 21-300, Driver Selection and Training; TM 9-2810, Motor Vehicle Inspections and Preventive Maintenance Service; TM 10-460, Driver's Manual; and FM 25-10, Motor Transport.

b. RESPONSIBILITY. Vehicular maintenance is a command function. The commanding officer of an operating organization is responsible for the performance of preventive maintenance, repair work within the limits of unit facilities, the evacuation to higher echelons of all disabled vehicles not reparable within the organization, and the proper compilation of administrative records necessary for maintenance.

c. **ECHELONS OF MAINTENANCE.** Echelons of maintenance within the battalion include—

(1) *First echelon.* This work is performed by the vehicle driver and crew, and includes preventive maintenance and emergency roadside repairs. Preventive maintenance includes servicing, lubricating, and care of tools and equipment.

(2) *Second echelon.* This work is performed by company and battalion maintenance personnel and consists of technical advice, scheduled inspections, minor repairs, unit replacements, supply, and battle-field recovery. First echelon overflow is included in this category.

d. **LIMIT OF REPAIR.** The primary function of maintenance within the battalion is of preventive nature. The vehicles are repaired by first and second echelon in accordance with—

(1) Nature of repairs.

(2) Availability of authorized spare parts, tools, and equipment.

(3) Capabilities of personnel.

(4) Tactical situation.

123. PREVENTIVE MAINTENANCE.

a. **GENERAL.** Preventive maintenance is a continuous program, whether in the field or in garrison, performed by vehicular drivers and crews and maintenance personnel under direct supervision of the organization commander.

b. **SCOPE.** Preventive maintenance includes—

(1) Continuous daily maintenance service by all drivers and crews.

(2) Daily and weekly service by operator or crew supervised by chief of section or noncommissioned and company officers.

(3) Monthly (1,000-mile) or 50-hour (500-mile) service by organization maintenance personnel supervised by an officer.

(4) Semiannual (6,000-mile) or 100-hour (1,000-mile) service by unit maintenance personnel supervised by an officer.

124. INSPECTIONS AND SERVICE.

a. CONTINUOUS. Maintenance service by the driver and crew includes—

(1) Inspecting, servicing, lubricating, tightening, and cleaning the vehicle before operation, during operation, at halts, and after operation.

(2) The repair of defects within the scope of tools available, capabilities, and authorization.

(3) The reporting of all defects not repairable by the driver or crew.

(4) The prevention of vehicle abuse.

b. DRIVER AND CREW. Inspections and service by the driver and crew are—

(1) *Before operation service.* Necessary to determine if conditions have changed since previous after-operation service.

(2) *During operation service.* Necessary to detect improper performance during operation of vehicle, with corrective steps being taken before defect develops into actual break-down.

(3) *At halt service.* Necessary to detect and correct deficiencies developed during operation. This service is performed under all tactical conditions and results are reported promptly to section or platoon leader.

(4) *After-operation service.* This service is performed to prepare vehicles to operate again at a moment's notice. The vehicle is given a thorough inspection and this phase is never omitted.

(5) *Weekly, or after-combat, service.* This service supplements daily maintenance and consists of the after-operation service, plus special checks on designated items and a general tightening, cleaning, and lubrication.

c. **COMMAND INSPECTIONS.** Inspections to determine the presence and condition of vehicles, weapons, equipment, and tools are held periodically in garrison and in the field, under the supervision of the battalion commander. All officers and enlisted personnel, except the necessary overhead, attend these inspections. Officers check all equipment and its condition. The battalion commander and his staff spot check each company. The inspections are held as frequently as necessary to insure that equipment is present and well kept. Individual clothing and equipment also may be inspected at this time.

d. **SPOT CHECKS.** Spot checks are made to insure a maximum effort in preventive maintenance. The battalion commander and his staff participate in these checks. In addition, spot check teams, composed of maintenance personnel, check vehicles at unexpected times and places. Company commander and platoon leaders are required to make frequent checks on their units.

125. PARKS.

a. **GENERAL.** Military formations prior to daily operation, after daily operation, and at other designated times, are held in garrison and in the field under direct supervision of responsible officers, for the purpose of performing preventive maintenance.

b. **SUPERVISION.** Work during the period is supervised energetically by all officers. The maintenance officer and personnel not actively engaged in maintenance work assist and advise in the work making decisions on technical matters pertaining to the vehicles.

c. **SPOT CHECKS.** Officers and the company motor sergeant conduct spot checks during the period to insure a thorough inspection and servicing on the part of the vehicle crew.

126. COMBAT MAINTENANCE.

a. GENERAL. In combat the maintenance of vehicles is pushed vigorously, with vehicles being kept in the best possible state of repair and ready for instant use. Battalion maintenance crew members go forward, repairing all possible disabled vehicles and promptly recovering those calling for work in higher echelons.

b. SERVICE PARK. The service park is established along the axis of evacuation, where the battalion maintenance platoon repairs and returns to duty all disabled vehicles possible. The battalion motor officer has headquarters at the service park. He controls the repair of vehicles on the battlefield, the recovery of vehicles not repairable on the battlefield, and the turning over to higher echelon the overflow and repair jobs beyond the scope of second-echelon maintenance. The initial service park usually is located near the service company and trains bivouac area, moving forward to succeeding predesignated areas in order to keep up with the advance. Battalion and company recovery units bring the disabled vehicles to or near the service park if time permits. If not, they move them to a concealed position near the axis of evacuation or a defiladed position on the battlefield, termed a vehicle collecting point, notifying the battalion motor officer of their location. If a considerable advance has been made, recovery parties may haul disabled vehicles only as far as a predesignated point where the battalion maintenance platoon soon establishes a new service park. As the work in the old park nears completion the maintenance platoon moves to the new service park, leaving a crew at the old service park to complete the work there. The maintenance platoon furnishes close support to the combat troops, moving to the succeeding service parks at the earliest possible

- A.—Higher echelon repair jobs recovered to ordnance recovery collecting point.
- B.—2d echelon repairs recovered to service park.
- C.—Time prohibits recovery of higher echelon repair jobs to VCP. Recovered to axis of evacuation.
- D.—2d echelon repair jobs recovered to new park just prior to moving.

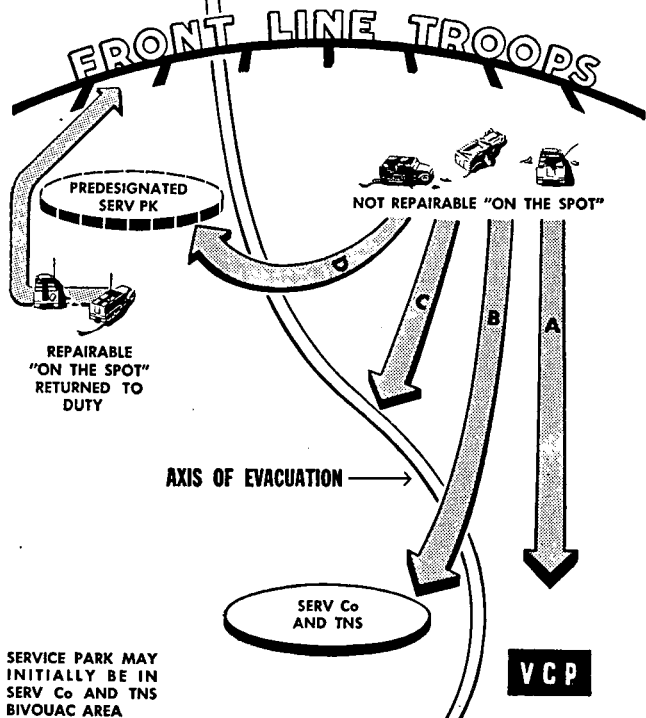


Figure 34. Repair and recovery of disabled vehicles in combat.

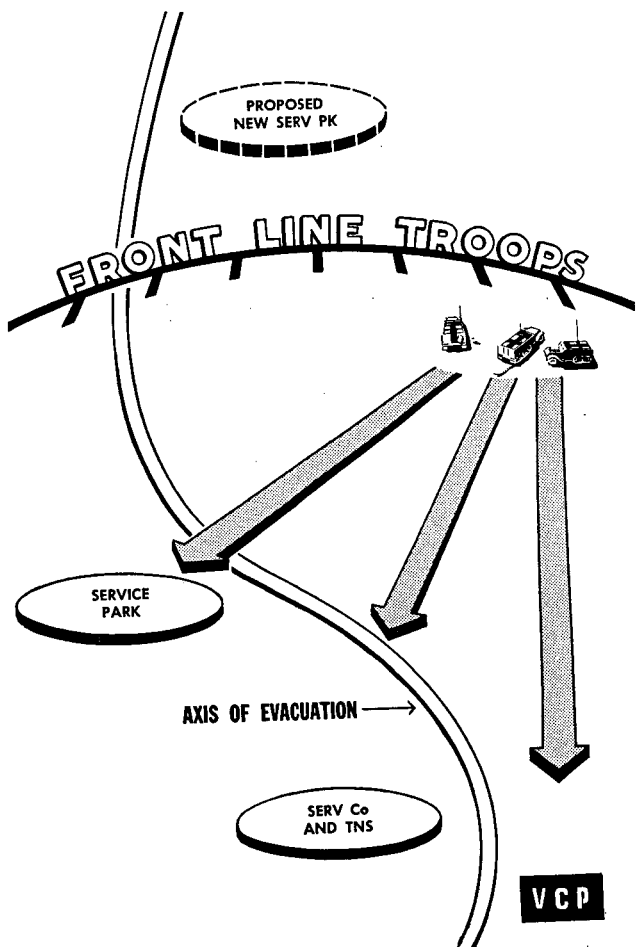


Figure 35. The maintenance platoon moves forward as soon as the situation permits. Interested parties are kept informed of the location of the operating establishment at all times.

moment. Plans for the battlefield maintenance include—

(1) Location of the initial service park and the number and location of succeeding parks. The service parks are located in covered areas near the axis of evacuation and are spaced from 1 to 3 miles apart.

(2) When each service park closes, the battalion maintenance platoon moves to a new park.

(3) Method for notifying interested parties within the battalion and higher-echelon evacuating units of the displacement of the service park.

(4) Whether or not disabled vehicles not repairable on the spot will be moved to the service park or left for repair in the field. The situation governs this decision, which often is altered during combat. During static situations the vehicles usually are brought to the service park or to concealed areas along the axis of evacuation. During a fast-moving situation, it may be necessary to leave many of the vehicles in the field. When this occurs, it is necessary that battalion maintenance and ordnance supporting units be notified of locations of disabled vehicles (vehicle collecting points).

(5) Coordination with the plan of recovery and evacuation of higher-echelon maintenance units. It is the responsibility of the battalion motor officer that all vehicles not repairable within the battalion are reported to higher echelon for repair or evacuation without delay.

c. COMPANY MAINTENANCE. In combat, company maintenance crew members follow immediately behind combat troops. They attempt to repair all disabled vehicles on the spot. Those not repairable are turned over to battalion maintenance for repair or recovery.

MEDICAL DETACHMENT

127. GENERAL.

a. SCOPE. The medical detachment is an integral part of the armored infantry battalion. The detachment has the function of supervising and advising on health and sanitation measures within the battalion, giving immediate care to personnel of the battalion who become sick, injured, or battle casualties, and evacuating the more serious cases to a higher echelon. (For details see FM 17-80.)

b. ORGANIZATION. The detachment is organized to function in garrison and in combat. The battalion surgeon, who also is a staff officer, is commander of the detachment. He has a medical administrative officer and a dental officer to assist him. Specially trained surgical, medical, and dental technicians aid the medical and dental officers in medical, health, and sanitation tasks within the battalion.

c. TRAINING. Training for the enlisted men is technical for the individual and tactical for the detachment as a whole. The surgeon is responsible to the battalion commander for training the medical detachment. The detachment is trained with the rest of the battalion in all tactical exercises, in order to familiarize the men with the tactical employment of the battalion. The technically trained enlisted men of the detachment, in turn, assist in teaching battalion classes in personal hygiene, first aid, and sanitation.

128. TACTICAL EMPLOYMENT.

a. In combat the detachment attaches a $\frac{1}{4}$ -ton truck, with trained first-aid men to each combat company. The combat troops are supported closely by these ambulances and men. Battlefield casualties are given first aid in the field and evacuated promptly to the battalion aid station.

b. The ambulance is moved forward with the combat troops. Each ambulance is equipped with necessary medical supplies prior to joining the company. As supplies are used, they are replenished at the battalion aid station. When not in use it remains near the company command post or in a covered position along the line of drift in rear of or near the company, where it is contacted by platoons on call.

c. A battalion aid station is set up along the axis of evacuation, where the battalion surgeon controls medical treatment of casualties and the prompt evacuation of wounded and sick troops to the next higher medical unit. Casualties are brought to the aid station by ambulances or litter bearers. Walking wounded are directed to the aid station by medical detachment personnel in the combat area.

d. On road marches the battalion surgeon rides in the $\frac{1}{4}$ -ton truck near the battalion commander's half-track, in order to keep abreast of the tactical situation. Two of the ambulances with first-aid men are distributed through the marching column. The remainder of the medical detachment ride at the rear of the column. (See fig. 9.) Upon arrival at the bivouac or assembly area the dispersed vehicles of the detachment are guided to their sector by the detachment guide. The detachment usually is located in the battalion headquarters and headquarters company area.

129. BATTALION SURGEON.

The duties of the battalion surgeon are prescribed in AR 40-10 and FM 17-80. He is responsible for the technical service of the detachment, keeping of medical records and statistics, and the carrying out of all health and sanitation measures within the battalion. As a staff officer, it is necessary that he is familiar with the tactical situation in combat, in order to make quick, accurate, and logical recommendations and decisions in regard to employment of the medical detachment. Specific duties include—

a. PREVENTIVE HEALTH MEASURES. The battalion surgeon makes recommendations on sanitation and health measures for the control of communicable diseases. He is alert at all times, anticipating the possible appearance of diseases within the command and instigating preventive measures to forestall their appearance. He recommends that communities where communicable diseases have made their appearance be placed off limits.

b. CARE AND TREATMENT OF SICK AND WOUNDED. The battalion surgeon initiates and supervises measures for the care and treatment of the sick and wounded of the command. This includes the holding of regular sick call in garrison and the treating of sick and wounded in combat. Only minor cases are treated wholly within the battalion, due to lack of equipment and facilities. It is the duty of the battalion surgeon to sort the cases, either he or one of the assistant surgeons deciding whether or not the patient is to be evacuated to a higher medical echelon. The more serious cases are given emergency treatment and prepared for evacuation to a higher echelon, where more specialized treatment is given.

c. DENTAL SERVICE. The surgeon supervises the dental service of the battalion. The dental officer is responsible for the dental work, including the keeping

of records and preparation of reports, but the battalion surgeon is responsible for the adequate and proper execution and supervision of this specialized part of medical care. In combat the dental officer remains at the battalion aid station, performing emergency dental work and assisting the battalion surgeon in general duties when necessary. During rest periods between combat phases he makes dental surveys and performs necessary dental treatment.

d. INSTRUCTION. The battalion surgeon is responsible for the instruction of all battalion personnel in basic military medical subjects, which includes first aid, sanitation, personal hygiene, malaria control, and venereal diseases.

e. DISEASE PREVENTION. Vaccination and inoculation of personnel of the battalion are responsibilities of the surgeon. An accurate record of these preventive measures is kept and entered in the medical history of each individual. The surgeon coordinates with higher headquarters on quarantines, malaria control, and other necessary preventive measures.

f. ADMINISTRATIVE. A complete medical history is kept on each officer and enlisted man by the battalion surgeon. In addition, periodic medical reports are required by higher headquarters. In addition to the periodic reports, informal ones are given to the battalion commander and division surgeon on unusual events. During combat, these special reports are in writing; in garrison, they may be oral.

g. INSPECTIONS. The surgeon is responsible for daily inspections of the battalion area, in combat and in garrison. Company messes, latrines, quarters, and recreational facilities are inspected as often as necessary to insure a high standard of cleanliness and sanitation. He assists in the selection of the bivouac area, coordinating environmental conditions with the tactical situation.

130. COMMAND RESPONSIBILITIES.

a. The health and physical well-being of personnel of the battalion are responsibilities of the battalion commander. He will take an active part in the health and physical program and by frequent inspections insure their successful execution. The battalion surgeon and the medical detachment are responsible to the battalion commander for carrying out all medical policies. Unit commanding officers, in turn, are responsible that matters pertaining to the health of the command are brought to the attention of the battalion commander or surgeon.

b. Daily checks are made by company commanders, platoon leaders, and squad leaders on the condition of the men and their environment. Commanders and leaders are on the alert at all times for breaches in health and sanitation discipline. Daily reports, either oral or written, showing the status of the health of the command, are given to the battalion commander by the surgeon and company commanders.

c. Company commanders and the battalion surgeon coordinate efforts for reconditioning and rehabilitating individuals who are temporarily maladjusted. The company commanders keep in close touch with their men, reporting any signs of maladjustment to the battalion commander and the surgeon. The surgeon, after investigation, makes recommendations for action to be taken. Before combat the surgeon prepares the command mentally for the normal reactions of the individual under fire. After combat he makes a survey of the battalion for men needing mental reconditioning and rehabilitation, transferring such cases to higher medical echelons.

APPENDIX I

ILLUSTRATED PROBLEM (ATTACK OF A POSITION)

1. The armored infantry battalion in the attack makes full use of its mobility, firepower, and light armor protection. (See par. 30.) Tanks assist infantry by supporting the infantry attack by fire. (See par. 29.)

2. SITUATION (fig. 36).

The leading elements of a reinforced armored infantry battalion advancing to the north have been stopped along ridge *A* by heavy antitank-gun and small-arms fire. The enemy occupies a strong defensive position on ridge *B*. Company *C*, minus one rifle platoon, is deployed along ridge *A*. The remainder of the battalion, with an attached medium tank company, is in an assembly area at position *X*. The infantry battalion has one battalion of armored field artillery in direct support.

3. ACTION (fig. 37).

In conformity with the battalion commander's attack plan—

a. Companies *A* and *B* move to defilade position in rear of *LD* on ridge *A*, personnel dismount, and vehicles are moved to gun defilade positions prepared to support the dismounted attack.

b. The machine gun platoon moves to edge of woods at *H*.

c. The assault gun and 81-mm mortar platoons move to reverse slope of hill *Z*.

d. Two platoons of the medium tank company move to a turret defilade position in rear of the line of departure, one platoon supporting company *A* and the other company *B* in the advance.

e. The supporting field artillery fires prearranged concentrations on enemy locations, beginning at *H-5*. The artillery fire lifts on orders as the attacking troops arrive within 100 yards of ridge *B*. Other artillery fire is called for as needed by the forward observer of infantry commanders.

f. The dismounted infantry attacks, supported by the vehicular weapons, mortars, assault guns, and tanks, with the antitank guns protecting against a hostile mechanized attack.

4. CONSOLIDATION (fig. 38).

When the dismounted attack reaches the intermediate objective, the supporting vehicles are moved forward to defilade positions on ridge *B*. The attack is continued in a similar manner to ridge *C*, the battalion objective, and the new position is organized.

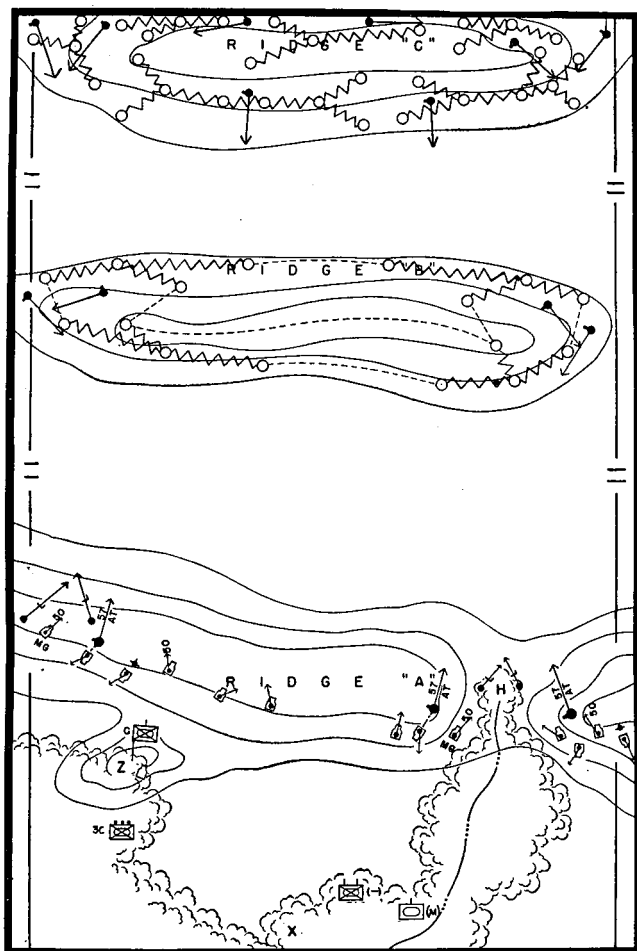


Figure 36. Vehicular and supporting weapons of the leading element of the battalion are employed when resistance is met.

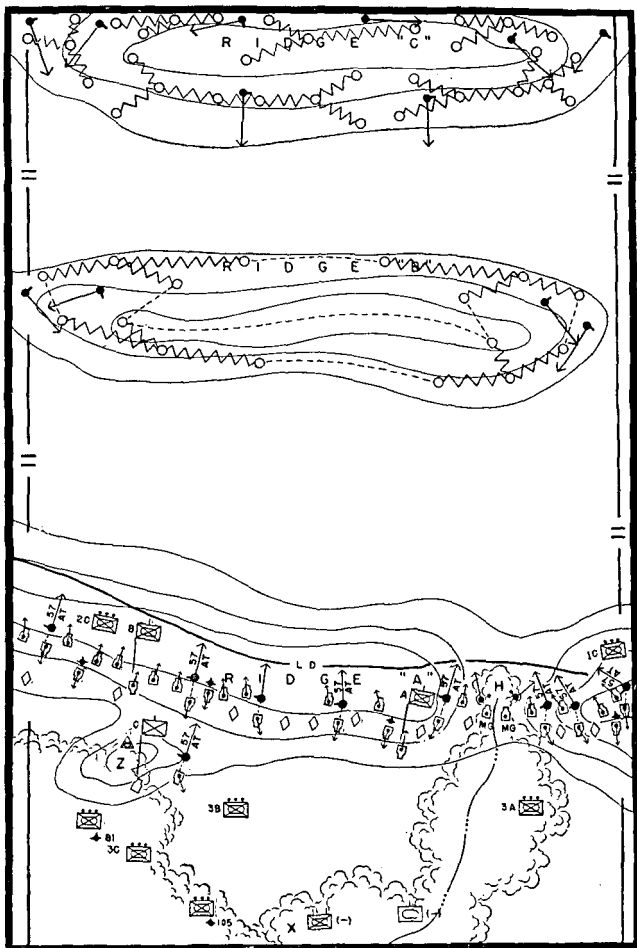


Figure 37. Vehicular guns and other supporting weapons support the attack from defilade positions.

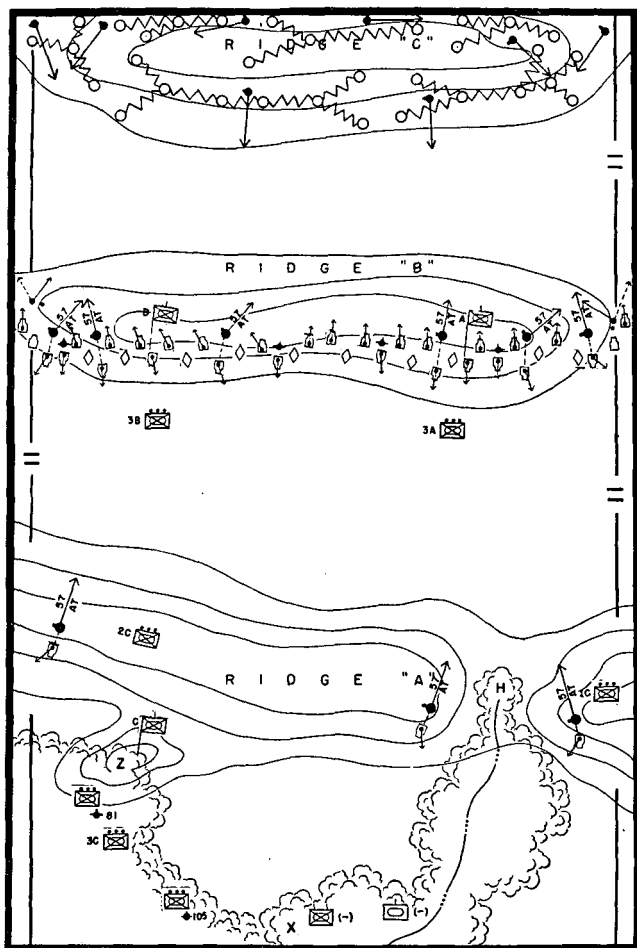


Figure 38. Vehicles move to the intermediate objective upon its capture to support the attack on the final objective.

APPENDIX II

FIELD INSPECTION OF AN ARMORED INFANTRY BATTALION

Section I. GENERAL

1. GENERAL.

a. DEFINITION. A field inspection is a detailed inspection to ascertain the adequacy and condition of individual and organizational equipment including weapons, communication equipment, vehicles, and stowage.

b. PURPOSE OF FIELD INSPECTION. The field inspection is the means whereby a commander determines the physical readiness of an organization for combat. It is held frequently during training to familiarize all personnel with the procedure and standards required, and to assess the current condition of the organization. It is held also in the theater of operations, both before and after combat.

c. CORRECTIVE ACTION. A field inspection is of little value unless prompt action is taken to correct deficiencies found during preparation for and conduct of the inspection.

2. PURPOSE AND SCOPE.

This appendix has been prepared as a guide for organization commanders and inspecting parties in preparing and conducting field inspections. It is written to apply to all conditions under which inspections are held, from formal ceremonies to tactical situations where expediency is paramount.

3. CATEGORIES OF EQUIPMENT.

A field inspection is conducted most efficiently when equipment is divided for this purpose into three categories:

a. INDIVIDUAL EQUIPMENT. This category may be inspected before or after the vehicular inspection. Shelter tents are pitched, and equipment, including the contents of canvas field bags, laid out as prescribed in FM 21-15.

b. VEHICLES AND VEHICULAR EQUIPMENT. This phase of the inspection may be a command inspection by the organization commander and staff or by a higher headquarters inspecting party; or it may be a technical inspection made by personnel from within the organization to be inspected or by an inspection team from higher echelons of maintenance. In any case, a technical inspection must be made in the preparation for or during the field inspection. (See TM 9-2810 and AR 850-15.)

c. ORGANIZATIONAL EQUIPMENT. In the theater of operations the inspection of organizational equipment may be held in one or more places, depending on the tactical situation. Thus, maintenance, medical, mess, and some administrative equipment may be inspected at the battalion bivouac. Some equipment may be at the trains bivouac and the inspection is then conducted at its location. In any case, the inspection must reflect the exact physical condition of the organization.

4. DIRECTIVE.

The order for the field inspection usually is issued by the organization commander. However, it may be issued by higher authority. In the early stages of training it may be preceded by a warning order 2 or 3 days in advance. In combat, or after a high state of training has been reached, the inspection may be

ordered on a few hours' notice. In order that the inspection may reflect accurately the physical status of the organization, sufficient time must be allowed for the preparation of shortage lists. The order for the field inspection of a company usually is oral. For a battalion it may be oral or written. It includes as much of the following as may be necessary:

- a.* Time of inspection.
- b.* Special preparations.
- c.* March order for movement to the inspection area.
- d.* Formation of vehicles and personnel.
- e.* Methods and phases of inspection.
- f.* Reports to be submitted by unit commanders.
- g.* Special instructions to the inspecting party.

Section II. PROCEDURE

5. GENERAL.

a. Prior to the field inspection, all equipment—organizational, individual, vehicles, and vehicular equipment—should be carefully inspected for cleanliness, serviceability, and shortages. This inspection is performed by the using personnel, supervised by the appropriate officer. Lists of shortages including un-serviceable items are prepared. These lists are consolidated by the company property officer who takes immediate action to obtain replacements. In the theater of operations the replacement of items is dependent upon the supply procedure in the theater. The objective sought is the speedy replacement of items.

b. **STOWING OF VEHICLES.** Stowage of vehicles is as prescribed in Technical Manuals (listed in FM 21-6) for the vehicles and by the organization commander.

c. **PLACE OF INSPECTION.** In the theater of operations a field inspection usually is held in the bivouac

of the battalion or smaller unit. Battalion and higher unit commanders inspect each company in its own area or have each company march to a designated place at a specified time for the inspection. When desired, the battalion may be formed and inspected in one place.

d. FORMATIONS OF VEHICLES. FM 17-5 gives formations of vehicles for inspection. Under tactical conditions vehicles are located as required for security.

e. FORMATION OF PERSONNEL. Personnel is formed for inspection as prescribed in appropriate Field Manuals covering crew drill of the vehicle or as prescribed in FM 21-15. Under tactical conditions they form as the situation requires.

6. VEHICLES AND VEHICULAR EQUIPMENT DISPLAY.

a. PURPOSE. The primary purpose of the display of vehicles and vehicular equipment is to facilitate a check of the presence and serviceability of vehicles and accessories by the vehicle crews and the inspecting parties. In training, it teaches an orderly, uniform system of checking these items and has high disciplinary value. Figures 39, 40, and 41 are intended to suggest uniform displays. Frequent inspections during training, using uniform arrangements of tools and accessories, will familiarize all personnel with the equipment. As a general rule, armament, radio sets, decontaminating equipment, pioneer tools, and fire extinguishers, are left in place in the vehicle. Ammunition is inspected in its stowage position.

b. SIGNAL COMMUNICATION EQUIPMENT. (1) *General.* All miscellaneous signal communication equipment is displayed along with vehicle accessories. Vehicular batteries are exposed and FM sets are aligned on the correct preset channels as prescribed in the Unit Radio Telephone Directory. AM sets are pretuned to frequencies prescribed in Signal Operation Instructions.

(2) *Types of display.* The details of each display of signal communication equipment depend on the type of radio installation. Signal communication accessories are always displayed on the same side of the portion of the display panel allocated to them and in the same relative location. (See figs. 39, 40, and 41.)

c. **ARMAMENT AND ACCESSORIES.** (1) *Vehicular armament.* All vehicular armament is mounted with sights in place. Ammunition boxes are installed or placed in their proper locations. Ammunition is carefully cleaned and stowed. Spare parts for arms and accessories, cleaning equipment, spare telescopes, gun covers, tools, rammers, and brushes are displayed with vehicular equipment. (See figs. 39, 40, and 41.)

(2) *Individual arms.* Individual arms may be inspected at the time of the vehicular equipment inspection as prescribed in crew drill or they may be inspected with individual equipment. (See par. 7 below.)

d. **VEHICLES AND VEHICULAR EQUIPMENT.** In figures 39, 40, and 41 are shown suggested displays of vehicular tools, equipment, and spare parts. In arranging tools and spare parts the primary object of the display is to facilitate the determination of the presence and serviceability of the item. Avoid fancy displays which will confuse the inspecting party.

e. **CHEMICAL WARFARE EQUIPMENT.** Decontaminating apparatus is inspected in place in the vehicle. Gas masks of individuals are inspected with individual equipment. (See par. 7 below.)

f. **MEDICAL EQUIPMENT.** The 12- and 24-unit first-aid kits are opened and displayed as prescribed in the outline on the bottom of the lid. All dressings which have been opened are unserviceable and are not presented. Individual first-aid kits are displayed with individual equipment. (See par. 7 below.)

g. CAMOUFLAGE EQUIPMENT. Camouflage nets, if not in use, are left on the vehicles. They are unrolled as the inspecting officer prescribes.

7. CLOTHING AND INDIVIDUAL EQUIPMENT.

Shelter tents are pitched and each man displays his equipment directly in front of his half of the tent. (See FM 21-15.)

8. ORGANIZATIONAL EQUIPMENT.

a. HEADQUARTERS. Headquarters equipment is displayed by setting up the command post of the organization (battalion or company) and displaying the contents of all chests and desks. When the personnel section is in the rear echelon of the higher headquarters, it may be necessary to conduct the inspection of this personnel and equipment at a separate time and place.

b. MESS. The kitchen is set up complete on the ground as prescribed in TM 10-405, FM 17-5, and special instructions issued by the organization commander.

c. MEDICAL. The aid station is set up for operation and all equipment displayed. In the tent are displayed all medical chests with component parts laid out on shelves, drawers, and the operating table. Litters, blanket sets, and dressing sets are displayed in front of the tent. (See fig. 42.)

d. MAINTENANCE. The tools, equipment, and spare parts of the company and battalion maintenance sections are displayed as directed. This display may include only a small portion of this material laid out on canvas or on the ground with remainder neatly arranged in the appropriate chests. The complete display of company and battalion maintenance equipment requires an area and time of preparation which must be justified by the necessity for such an inspec-

quires careful judgment by the inspecting party. The work of the inspecting officers is facilitated by the presentation of reports of shortages and deficiencies prepared beforehand by designated individuals in the unit. (See par. 5.)

(3) *Coordination.* The movements of the various inspecting teams are coordinated to avoid interference with each other and to keep the senior inspecting officer aware of the progress of the inspection.

b. SIGNAL COMMUNICATION EQUIPMENT. (1) Sufficient personnel is available in the battalion to organize three teams each consisting of three men, technically qualified and experienced, and one nontechnical recorder. The following personnel is usually sufficient:

- 1 battalion communication officer.
- 1 battalion communication chief.
- 5 company communication sergeants.
- 2 radio repair men.

(2) *Conduct of inspection.* (a) Time available during the field inspection does not permit a complete check of such items as spare vacuum tubes and dry batteries. Therefore, provision should be made for qualified personnel to conduct a detailed check of such items as a normal procedure *prior* to the time of the check. Unbroken seals are accepted by inspectors as proof of serviceability. Actual serviceability of each radio is established by entry into an appropriate net before departure from the service park or during the inspection.

(b) The physical check of equipment may be conducted by two or more teams. A plan for check by two teams follows:

tion. It is more practicable to inspect this equipment by chest or set, using the contents list pasted on the lid or by the SNL.

9. INSPECTING PARTIES.

a. GENERAL. (1) The inspecting party for a company field inspection may consist of the officers of the company supplemented by skilled enlisted personnel. For a battalion, the battalion commander and his staff are supplemented by company officers and enlisted technicians. If the inspection be directed by higher authority, the scope may approach a technical inspection with the higher headquarters furnishing the specialist personnel necessary. In any case, the inspecting party is divided into teams for each category of equipment. The several teams may be designated to inspect each of the following:

Signal communications.

Arms and armament.

Track vehicles.

Wheeled vehicles.

Organizational equipment (less vehicle and vehicular equipment).

Individual clothing and equipment.

(2) Each inspecting team consists of one or more officers and enlisted technicians with a recorder to note the results of the inspection. Inspectors use check sheets where necessary, but immediately furnish the recorder data on discrepancies found. Check sheets are not used as reports but may be used as inclosures to the report. The standards are as prescribed in the directive and may vary according to the situation. Thus, equipment may be "training serviceable" but not "combat serviceable." (See POM.) "Combat serviceability" is directed for signal equipment. The decision as to further use re-

1st team	2d team	Duties
Com O	Bn Com Chief	General check of articles laid out for display (see par. 6a), to include—Completeness, serviceability (as indicated by general appearance), and conformity to established standards.
Co Com Sgt	Co Com Sgt	1. Enters each vehicle and checks all installed signal communication equipment, such as: receivers, transmitters, antenna, and interphone. This is a complete first-echelon check, less the operational check. 2. The inspection will include a physical check of all authorized crystals and spare fuses.
Co Com Sgt or Radio Repairman.	Co Com Sgt or Radio Repairman.	Checks each cell of the vehicular battery, using a high discharge rate voltmeter and hydrometer. General condition, cleanliness, indication of leakage and height, and specific gravity of electrolyte are noted.
Recorder	Recorder	Records data.

(3) *Standards.* The standard for all signal communication equipment is "combat serviceability."

c. ARMS AND ARMAMENT. (1) Each inspecting team should include an officer, an armorer, and a recorder. Inspection of armored infantry battalion requires five teams, one for each company.

(2) *Conduct of inspection.* Each team conducts a systematic inspection of vehicular armament, accessories, spare parts, and ammunition.

(3) *Standards.* The serviceability of armament is classified as follows:

(a) Serviceable for immediate use.

(b) Serviceable with immediate minor repair or replacement.

(c) Unserviceable or requiring major repair.

d. FULL-TRACK VEHICLES. (1) The inspecting teams for full-track vehicles are responsible for all full-track motor carriages and tank recovery vehicles, less signal communication equipment and vehicular armament. They are composed of qualified officers with technicians from the battalion maintenance platoon. Four teams are desirable.

(2) *Conduct of inspection.* Team No. 1 inspects tank chassis. Team No. 2 inspects tank engines. Team No. 3 tests engine and electrical circuits. Team No. 4 inspects general maintenance of the vehicle including tools and spare parts.

(3) *Standards.* The standards must be governed by the serviceability required. The results of the inspection are based on—

- (a) Vehicle appearance and mechanical condition.
- (b) Completeness of tool and accessory sets and equipment.
- (c) Adequate maintenance and lubrication.
- (d) All parts and units secure.
- (e) Parts not excessively worn.
- (f) No leaks.

e. WHEELED VEHICLES. Wheeled vehicle inspecting teams are responsible for the inspection of all wheeled and half-track vehicles, less signal communication equipment and armament. Four inspectors per team are desirable, with duties of inspectors allocated as follows: Inspector No. 1 inspects chassis. Inspector No. 2 inspects engines. Inspector No. 3 tests engines and electrical circuits. Inspector No. 4 inspects general maintenance, tools, and spare parts. The standards for wheeled vehicles are the same as for full-track vehicles. Have as many teams as necessary to inspect the unit in the time allowed. An experienced team with a recorder can inspect about six vehicles in an hour.

f. ORGANIZATIONAL EQUIPMENT (LESS VEHICLES AND VEHICULAR EQUIPMENT). (1) Inspection teams for this equipment are designated as follows:

- (a) *Headquarters equipment.*
S-1 and S-4.
Personnel adjutant.
Sergeant major.
- (b) *Mess equipment.*
One officer.
One medical officer.
- (c) *Medical equipment.*
Battalion surgeon.
Sergeant surgical technician.
- (d) *Battalion maintenance equipment.*
Battalion motor officer.
Battalion motor sergeant.
Battalion motor supply sergeant.

(e) The battalion commander, executive officer, and battalion motor officer supervises the entire inspection. The S-2 inspects all maps. The S-3 supervises the inspection of the operations equipment. In addition to the specific duties listed in this paragraph, all members of the battalion commander's staff assist in the inspection as the battalion commander desires.

(2) *Conduct of inspection.* All of the inspections prescribed in (1) above are made simultaneously. After inspecting the medical equipment, the battalion surgeon and assistants go to each company to determine the general physical condition of the men.

(3) *Standards.* See *h* below.

g. INDIVIDUAL CLOTHING AND EQUIPMENT. (1) *Organization of teams.* Teams are organized of the following personnel:

- Company commander.
- Platoon leaders.
- Company supply officers.

Company supply sergeants.

Platoon sergeants.

(2) *Conduct of inspection.* This inspection is held before or after the vehicular inspection. The company commander, supply officer, and supply sergeant, assisted by each platoon leader, inspect the individual equipment laid out as prescribed in paragraph 7 above.

(3) *Standards.* See *h* below.

h. STANDARDS. (1) *Preparation.* When the equipment inspection of a platoon is completed, the platoon leader reports this fact to the company commander who directs that vehicles be stowed. When stowage is complete, the platoon leader reports that fact to the company commander.

(2) *Allocation of teams.* As soon as each inspecting team finishes its part of the equipment inspection, it starts the stowage phase of the inspection on any units which may be ready. Teams are allocated to platoons or companies by the senior inspector.

(3) *Conduct of inspection.* The stowage of each vehicle is inspected to see that it is correct and secure. Special care is taken to see that there is no interference with the access to weapons and use of controls. Straps and lashings are checked for arrangement and tightness. Towed loads must be securely stowed with lunettes secure in pintles. Deficiencies in stowage are noted as for the equipment inspection.

Section III. REPORTS

10. REPORTS.

a. Each squad or section leader should have in his possession an individual list pertaining to his vehicle or activity. Units being inspected furnish reports to inspecting teams showing all shortages of equipment

and deficiencies which affect combat efficiency. In the zone of interior these reports are consolidated by companies according to class, such as ORD, QM. They show such shortages as are covered by validated requisitions and that corrective action has been taken for all other deficiencies. In the theater of operations they may be pencil memoranda.

b. Inspecting teams note all deficiencies and also conditions indicating commendable efficiency in the organization.

c. A written report is made by the senior inspecting officer to the appointing authority, stating the condition of the organization, and noting general deficiencies and commendations, if any. It may be amplified by inclosures.

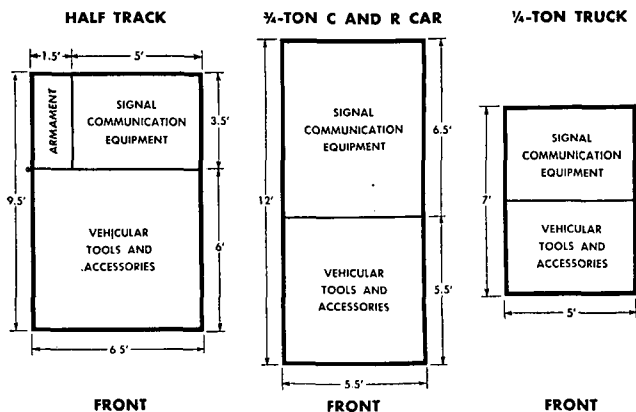
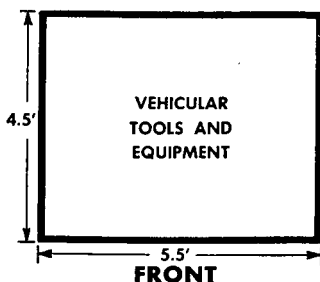
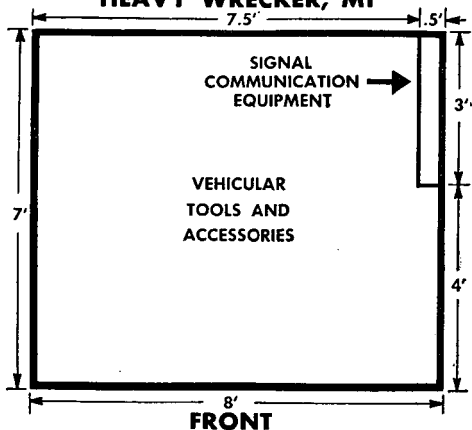


Figure 39. Suggested layouts for display of vehicular equipment.

¾-TON TRUCK, WEAPONS CARRIER



HEAVY WRECKER, M1



2½-TON TRUCK, 6 x 6

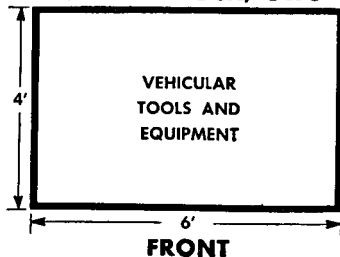
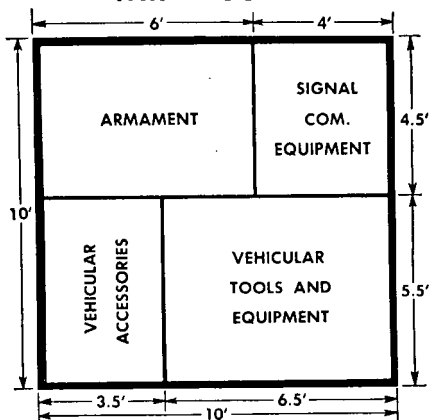


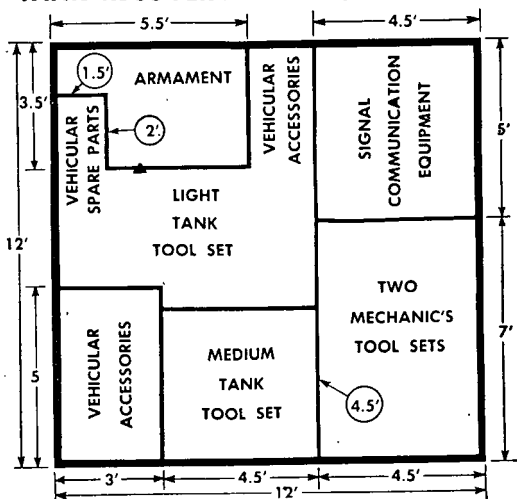
Figure 40. Suggested layouts for display of vehicular equipment.

TANK 105 MM



FRONT

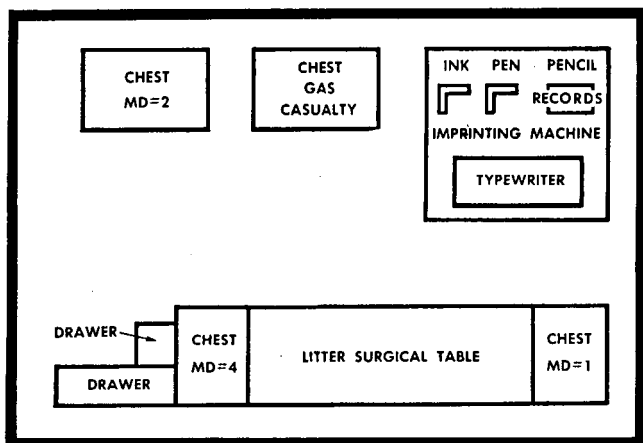
TANK RECOVERY VEHICLE, M32 SERIES



FRONT

Figure 41. Suggested layouts for display of vehicular equipment.

MEDICAL TENT



MEDICAL DISPLAY IN FRONT OF TENT

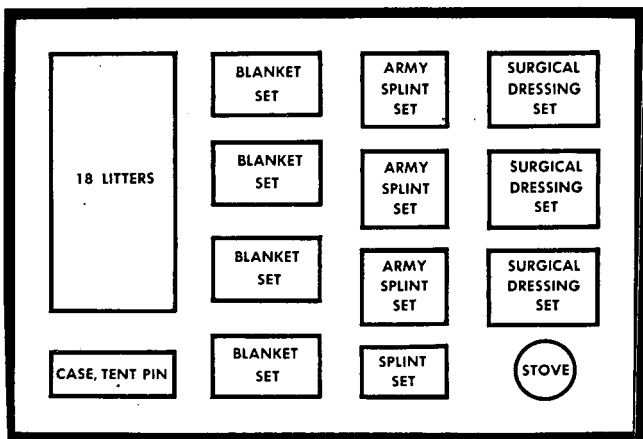


Figure 42. Suggested layout of equipment for the medical detachment.

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